This magazine is published to promote sound thought upon and concerning industrial medicine and traumatic surgery. To that end it will contain articles, news items, reports, digests and other presentations, together with editors' comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited.

Industrial Medicine

Reg. U. S. Pat. Off.

The editors will exercise care in checking on the accuracy of data printed, but in all other respects articles and opinions of which expression is allowed are the opinions of their authors—the editors reserving in all cases the right to comment on the same, in the current or any subsequent issues, as they may be inclined.

The Journal of Occupational Diseases and Traumatic Surgery

The Science, the Law and the Economics of Industrial Health

Volume 7 MARCH, 1938 Number 3

Occupational Dermatoses and the State

Sir E. Graham Little,

London

MY OWN contribution to this question is founded upon an examination of certain statistics of the incidence of dermatitis in Great Britain derived from the consideration of occupational diseases for which compensation has been allowed by legislation in England since the year 1918 when under a Home Office order "dermatitis produced by dust or liquids" was "scheduled" as an "industrial disease."* Previously to that date occupational dermatoses were granted compensation in the general category of accidents arising out of employment. I believe that this mode of approach to the subject now under discussion has certain peculiarly valuable features. The statistics of compensation are very carefully compiled and published year by year. Many of the cases rest upon legal decisions and thus represent the most rigidly examined instances. Inasmuch as no compensation is awarded for any disorder which lasts less than a week, the cases are relatively serious and well-established.

I can also claim that these statistics are in their volume and authority unique and indeed peculiar to Great Britain, which took the lead in this respect long before any other nation considered the matter at all. It is significant that one of the earliest and one of the best individual books upon this subject was written by an Englishman more than one hundred years ago, Dr. Thackrah, of Leeds, who in 1831 produced his "Treatise on the Effects of the Principal Arts, Trades and Professions on Health and Longevity," which remains a most remarkable and foresighted exposition of the subject.

The success of the British management of this matter is largely due to the fortunate fact that the Home Office, which is the Government department charged with the supervision of the whole system of factory inspection (and it is in factories that most of the cases occur), has enjoyed since 1896 the services of two very outstanding medical examiners, Sir Arthur Whitelegge, and Sir Thomas Legge. The value of these efforts directed by the State in the prevention of certain grave forms of occupational disease may be exemplified by two instances: (1) the White Phosphorus Prohibition Act of 1908, which was mainly the work of an intimate friend and contemporary of mine, still living, completely abolished the very dreadful and prevalent diseases due to the white phosphorus used in the manufacture of matches, which is so large an industry in our country; and (2) the invention by one of the inspectors employed by the Home Office of a method of disinfecting wool, known after his own name as the "Duckering process," operating from June, 1921, and carried out at the Government Station in Liverpool, has very materially lessened the ravages of anthrax, both as regards frequency of occurrence and mortality. Thus in the quinquennium 1901-05 there were 236 cases, and the mortality was 29.6%. In the last quinquennium 1926-31 there were 197 cases with mortality 10.5%.

Moreover, Great Britain, I think I can claim, has by far the largest and most carefully compiled body of vital statistics of any country in the world. The Decennial Reports issued by the Registrar-General, of mortality for certain occupations form an invaluable source of statistical information for those disorders which end fatally. The Factory Acts, beginning with the Act of 1833, have also resulted in a large body of accurate information and the more recent legislation under the Workmen's Compensation Acts has produced an even more important body of knowledge. I must explain that skin disorders under these latter Acts come into consideration under headings as follow:

I. Dermatitis produced by dust or liquids.
II. Ulceration of the skin produced by dust or liquids.
III. Ulceration of the mucous membrane of the nose or mouth produced by dust.
IV. Epitheliomatous cancer or ulceration of the skin due to tar, pitch, bitumen, mineral oil or paraffin, or any compound, product or residue of any of these substances.
V. Chrome ulceration or its sequelae.

* Read before the International Dermatology Congress in Budapest.

VI. Scrotal epithelioma (chimney sweep's cancer).

VII. Inflammation, ulceration or malignant disease of the skin and subcutaneous tissues due to exposure to x-rays or radioactive substances.

VIII. A localized new growth of the skin, papillomatous or keratotic, due to mineral oil.

The Acts require *compulsory* notification of epitheliomatous ulceration (from 1915) and chrome ulceration (from 1919). *Voluntary* notification of other forms of skin disorder, however, is invited and has become increasingly prevalent and in the latest issue of the Report of the Chief Inspector (1935) reaches the highest figure yet recorded over six years.

The proportion of skin diseases to other occupational diseases has been variously stated by various authors. Guy Lane on a review of 70,000 cases of occupational disease found 6.8% due to skin disorders. In Great Britain on a review of cases arising in workshops and factories (and these form the most important source of such cases) leading to compensation for occupational disease, over 50% were found to be due to skin affections.

Either the incidence is very much less in European countries outside Great Britain or less attention is paid to this subject. The disability of "dermatitis" is "scheduled" in only four other European countries, Denmark, (limited to dermatitis caused by wood), Sweden, (limited to dermatitis by arsenic, mercury, irritant light or heat and x-rays or radium), Germany, (limited to three categories, injuries from galvanization, foreign woods and tar), Soviet Russia, (chiefly dealing with x-ray and radium dermatitis), and recently the Irish Free State. In Switzerland legislation is peculiar in that certain specified substances are incriminated as capable of causing serious injury to the skin.

British law awards compensation not for loss of employment but for incapacity. Thus our law courts gave compensation to a man who incurred a sentence of imprisonment in the course of an injury from his employment and drew the compensation while in prison. The legislation included under the heading of "the Workmen's Compensation Acts" and the Employers' Liability Act has made an enormous difference in the importance of occupational disease, as viewed from two angles: (1) The possibility and indeed probability that the medical practitioner confronted with a case of occupational disease may have to make his appearance subsequently in a court of law renders the practitioner especially careful in noting and recording the symptoms, and generally alert in the detection of such cases. Moreover the medical practitioner has usually to decide when disability (and compensation for it) should cease, a decision which is often extremely difficult to make and likely to lead to many embarrassments. (2) I think there can be little question also that in some cases the prospect of getting compensation produces a psychological effect quite sincerely felt by the patient in the direction of prolonging the period of convalescence and promoting unwillingness to return to work. There is another factor, perhaps not so frequently met, that of fear on the part of the injured workman that if he reports his illness he may lose his job, and consequently there is a regrettable tendency to conceal the injury in the first phases when treatment is most useful.

The burden upon industry has become a formidable consideration. When the first Workmen's Compensation Act was passed in 1897, when accidents only were considered, and not diseases, the estimate made was that there would be some 150,000 cases in a year. That this estimate was grievously mistaken is evident from the fact that for the year 1930, after diseases as well as accidents were included, in seven principal industries in which accurate statistics are obtainable the number of cases of compensation amounted to 461,130, and the total charge under the Acts upon industry in that year was estimated by the Home Office to amount to something like 12 million sterling. (One million pounds per month!)

Certain attempts have been made to classify occupational dermatoses according as the site of primary injury is the epidermis or the corium. It is claimed that there is a hypersensitivity of "epidermal" type and a hypersensitivity of "mesodermal" type. While occupational dermatoses are predominantly of the first type they are not exclusively so. The allergic reaction which most often explains the dermatosis may take place primarily in the epidermis or in the corium. In the first class is the whole group of contact dermatitis in which the anatomical lesion is an intra-epidermal edema. The reaction in this type is relatively delayed as compared with the reaction in which the corium is primarily concerned, and the noxious substance enters the vascular system directly. In an "epidermal" sensitivity contrasted with a "mesodermal" sensitivity the hereditary or familial element is generally absent. It is in this type of epidermal allergic reaction that the "patch test" of Jadassohn is most applicable. Unfortunately sensitization tests on the whole have not fulfilled the promise with which they were inaugurated and reliance upon these tests is expressly deprecated in the latest report of the Chief Inspector of Factories and Workshops (1935).

Although the group of mesodermal type is much smaller than the first it may be more important as, e.g., in trinitrotoluene poisoning, which was so disastrous a complication in our country in the Great War because of the impediment it caused in the production of shells.

The medium of absorption may not always be the skin, yet the skin may become secondarily affected, and cases of this kind thus enter into the category of occupational dermatosis. For example in the important group of prurigo of Besnier, inhalation may be the means of absorption, e.g., of dust carrying allergens specific for the individual.

SOME general axioms may be stated as explaining the incidence of occupational dermatitis.

1. The reaction of the skin to a direct irritant may be said to depend upon (a) the strength of the irritant, (b) the response of the individual.

(*a*) Legislation in Great Britain has been governed by the principle that for certain substances the assumption may be automatically made that if the claimant has handled the substance his injury is due to that handling. This assumed of all the diseases which are "scheduled" under the original Act and in successive additions to it. I have already given the list of diseases scheduled in this way as affecting the skin. This procedure "scheduling" has been adopted in various other countries, notably in Switzerland, where a very large number of substances are declared to be capable per se of producing injury without consideration of the second factor cited above.

(*b*) Pre-disposition to skin reactions may be congenital (idiosyncrasy) or acquired (sensitization). This reaction is now largely assumed to be an allergic one. Much difference of opinion exists as to the importance to be attached to it. In our law courts, in which a claim for compensation becomes so often a struggle between insurance companies, the claim for compensation by the workman is often resisted by the counter claim that the idiosyncrasy plays a more important part than the material to which the injury is attributed. How delicate the sensibility may be is very well demonstrated by a case reported by White of Harvard. A child aged six died as a result of coming into contact with a Negro servant immediately after that servant had been handling poison ivy, a Rhus toxicodendron. Sensitization may depend upon a very large number of concomitant circumstances, the consideration of which adds greatly to the complexity of the subject. Thus age, sex, conditions of pigmentation, endocrine equilibrium (of rapidly increasing importance in this connection), nervous factors, etc., may be mentioned as examples. Physical conditions such as temperature, ventilation, absence of light, a damp atmosphere, emotional states, including fatigue, play a part, difficult to assess in any individual case but nonetheless important in their cumulative effect.

Recent work confirms earlier observations of the influence of certain chemical sensitizers, the presence of which in the blood or tissues may in combination with another cause produce a reaction not attributable to either alone. It is a long-established fact that painting the surface of the skin with eosin sensitizes the patch so painted to the effect of light. Porphyrin occurring in the blood, in the bowel or in the urine has a special effect in precipitating solar dermatitis. There is some new evidence that cholesterolaemia predisposes to the development of carcinoma.

2. Repetition of stimuli in the great majority of cases diminishes the resistance in susceptible subjects. A notable exception to this rule, probably because the body has been subject to the stimulus for countless ages, is the mechanism by which deposit of pigment protects the skin from injury from light. In this instance repetition of stimuli may result in diminution of injury.

3. The normal intact skin offers a very remarkable protection chiefly mechanical, to most poisons applied to the surface, even including bacteriological infections. Conversely, injured skin allows of such entry. The peculiar properties of keratin, investigated both in laboratory experiments and by clinical observation explain the protection which the horny layer, so largely composed of keratin, affords. Keratin is soluble in relatively weak alkaline solution; and is resistant to mineral acids, even in high concentration.

4. The follicular openings of the skin, involving as they do a break of continuity, are a weak spot in the protection afforded by the integument. This is particularly true for septic infections, which so frequently begin in the follicle, and for the particular injury done by oil, in which the follicle is usually the seat of the inflammation.

5. The sebaceous secretion affords a very definite protection against surface damage and against the absorption of poisons, especially by the cutaneous blood vessels. Fat-dissolving agents, which remove the secretion, are consequently specially injurious to the skin and by allowing absorption into the blood may injure the system.

6. On the other hand, excessive secretion by the skin glands, sebaceous and sudoriparous, may provide solvents for the surface irritants and so produce a dermatitis. (1) Thus the prevalence of cancer of the scrotum in chimney-sweeps has been explained on the hypothesis that the sebaceous secretion particularly rich in this region dissolves the carcinogenic ingredient in soot. (2) In a case quoted by Whitfield a worker in a chemical laboratory developed a dermatitis only in hot weather, when the sweat, dissolving the chemical vapours in the air, produced an application irritating to the skin, these vapours being completely inoperative when his skin was dry. In a case which I saw a fur stole caused a band of vesication round the neck exactly as if liquor epispasticus had been applied to the surface. The wearer, running for a train, suffered excessive sweating and the sweat in all probability dissolved some of the dye in the fur and this acted as a local irritant.

7. Certain common diseases of the skin may render the patient peculiarly prone to develop occupational dermatoses, e.g., seborrhea, ichthyosis, xerodermia. The part played by seborrhea in lessening the resistance of the skin to septic infections was very conclusively demonstrated during the War. At the Base Hospital in Boulogne, as MacCormac showed in an excellent paper, seborrheic cases were enormously predominant in those persons whose wounds became septic, and the Dermatological Section of the Royal Society of Medicine of London actually prepared a "round robin" to the British War Office suggesting that seborrhea should prevent the acceptance of recruits for war service, a suggestion which however, in the stress of the struggle could not be accepted by the authorities.

The validity of these axioms is I think confirmed, and indeed they rest upon the actual figures in records of compensation cases. A very useful series is furnished by the publication of the National Labour Organization, giving percentages of prevalence under the headings of (1) causative agents and (2) trades concerned, over a period:

Causative Agents	Percentage
Alkalis	14
Oil	9.39
Dyes	8.51
Turpentine and substitutes	7.63
Sugar	6.95
Dough	6.03
Acids	4.4
French polish	4.15
Paraffin	2.9
Nickel compounds	2.15
Petrol and naphthalene	2.08
Accelerators	1.6
Wood dusts	1.18
Lime	.91
Methylated spirit	.85

Industries	
Engineers	13.7
Dyers and calico printers, etc.	8.5
Bakers and confectioners	7.7
French polishers and stainers	6.9
Chemical workers	6.6
Labourers	5.8
Platers	5.7
Painters	5.4
Rubber workers	3.6
Sugar confectioners	3.1
Metal workers	3.04
Cotton workers	1.8
Woodworkers	1.3
Biscuit makers	1.2

The picture is completed by a later return contributed by the Chief Inspector of Factories and Workshops in his latest Report, 1931-34. The position of each of these causative agents, and of the occupations, remains fairly constant in both lists.

Causative Agents	
1. Alkalies	818
2. Oil	464
3. Sugar	388
4. Degreasers, methylated spirit, etc.	309
5. Friction and heat	308
6. Turpentine and substitutes	274
7. Chrome	256
8. Dyes	249
9. Chemicals unclassified	245
10. Paraffin	204
11. Dough	156
12. Acids	131
13. Nickel compounds	96
14. French polish	90
15. Accelerators	28

Occupations	Percentage
1. Engineers	660
2. Dyers and calico printers	524
3. Metal platers and polishers	362
4. Painters	306
5. Labourers	299
6. French polishers	261
7. Bakers and confectioners	255
8. Sugar confectioners	182
9. Metal workers	180
10. Chemical workers	167
11. Rubber wrokers	147
12. Textile workers	143
13. Leather workers and tanners	140
14. Biscuit makers	114
15. Sugar refiners	89
16. Printers	75
17. Pottery workers	69
18. Oil refiners	43
19. Flour workers	32

THE most important of the industrial dermatoses in our country with regard to fatal effects resulting from it is irritation of oil and tar leading to epithelioma of the skin, and the part played by the State in dealing with this matter is so typical that I propose to conclude my paper with a special consideration of this subject.

The carcinogenic quality of tar and mineral oils has long been recognized and its importance is continually confirmed. Tar products as a cause of chimney-sweep's cancer of the scrotum were established as early as 1775 by Percival Potcof, St. Bartholomew's Hospital. The incidence of tar and oil cancer is very high in our country. In the Registrar-General's Report for 1926 whereas the mean annual death rate from cancer of the scrotum (almost invariably the first site of the affection due to oils and tar), in all males was 4.1 per million; in patent fuel manufacturers (that is to say working with tar products) it was 695.7; in chimney-sweep's also working with tar products, it was 534.3; in cotton operatives (working with mineral oils) 251.8.

I. Oil. The incidence of cancer in persons working with mineral oils excited alarm in this country as long ago as 1908 and compulsory notification as a prophylactic measure of "epitheliomatous ulceration due to tar, pitch, bitumen, mineral oil or absorption of any compound, product or residue of any of these substances," was introduced by a Home Office order in November, 1919. Cancer of the scrotum was demonstrated to result from mineral oils used in cotton-spinning in 69 out of 141 patients suffering from cancer of the scrotum in a series of cases investigated at the Manchester Royal Infirmary in 1922.

In 1926 the Home Office drew attention to the mortality in persons in the cotton-spinning industry using mineral oils as lubricating agents. Thus in the Registrar-General's Report for that year, whereas the mean general national death rate from cancer of the scrotum for all adult living males was 4 per million, the death rate in cotton spinners was 134 per million and in cotton workers other than spinners 72 per million. As a result of this report a body known as the "Manchester Committee on Cancer" devoted special attention to the investigation of the carcinogenic qualities of mineral oils (Manchester being the centre of the British cotton industry) and after a very prolonged research certain facts of great importance have been established. It is clear that some mineral oils are much more carcinogenic than others. Carcinogenic potency varies with refractivity and specific gravity of the oil and it is now possible to distinguish dangerous from less dangerous oils by physical tests alone. The formula suggested by the research in the last report of the Manchester Committee (1934) is as follows:— "Lubricating oils should have a refractivity below 5520 when the specific gravity is about 895, or alternatively refractivity below 5550 when the specific gravity is below 895." A further valuable result of this research is the discovery that the workman can be very efficiently protected against the ill effects of mineral oils by the following pro-

cedure: The workman is advised before doing his work to rub into the exposed skin an ointment containing equal parts of anhydrous lanolin and olive oil and on return from work to wash himself with soap and water and again rub the ointment into the skin.

In 1932 a Home Office Order scheduled "a localized new growth of the skin, papillomatous or keratotic, due to mineral oil affecting workmen engaged in cotton spinning by means of self-acting mules (i.e. spindles), the so-called mule-spinner's cancer" as a compensable disease.

II. TAR. The entry through the follicles of tar products is widely accepted as being the rule. Hot tar may be far more mischievous than cold and the rapidity of epitheliomatous growth produced by it may be astonishing, as in a case which I saw at St. Mary's Hospital. A man, a barge builder by trade, had spurted hot pitch upon his face while coating a boat with tar six weeks previously. When he came to me he had two ulcers upon his right cheek in the site where the hot tar had come into contact with the face, the clinical appearance of which was so like rodent ulcerations that one of my clerks drew my attention to an open textbook on his knee with a picture of a rodent ulcer extremely similar to the case under examination. Closer examination, however, of the patient revealed enlarged glands under the maxilla on the side affected. I referred the case to my colleague, Dr. Clayton Greene, who removed the skin lesions and the glands with the drastic completeness that characterized that surgeon's work. Recurrence in glands took place within three months in a worse form, and the man died within a year of the accident from mediastinal carcinoma.

There is a very curious difference in the incidence of tar cancer in different countries which would suggest that there are other causes besides the directly carcinogenic qualities of the tar; tar cancer is very common in this country, less common in Belgium, rare in France; investigations prompted by this observation have pointed to the importance of clothing of the operatives exposed to tar products, and especially of the habits of personal cleanliness. Comparison of the incidence of cancer of the skin from general causes is made in a recent report by Somerford of records of patients attending the Manchester and Salford Skin Hospital; out of a total of 613 cases of cancer of the skin 327 could be ascribed to irritants classified under the headings of (1) oil, (2) tar, (3) exposure to weather, (4) dry heat. This being a cotton-manufacturing area oil heads the list, exposure to weather coming second, and tar and dry heat third and fourth.

In the absence of any effective protection against tar injuries such as has been obtained against oil the importance of early and continuous medical inspection is increased. Tar epithelioma in its early phases of warty growth shows little malignancy, and excision of the primary lesion usually stops further developments. The comparison of two comparable centres of the manufacture of patent fuel (tar) is in this connection instructive. In Cardiff with periodical medical examination, and therefore adequate treatment, of 50 cases none proved fatal. In Swansea in the same class of workers where no such examination was made of 25 cases three were fatal.

Our experience in Great Britain for the past century in which the intervention of the State especially in medical matters affecting industry has been so far-reaching, definitely supports the pronouncement with which I wish to end my paper, namely that the most effective means of preventing industrial accidents of every kind, including dermatoses, is demonstrated to be (1) a constant supervision of operatives in workshops and factories by skilled medical inspectors with special experience in the type of disease or injury concerned, and (2) continued research, both clinical and in the laboratory, a combination which has had such admirable results for instance in the work of the Manchester Committee on Cancer, from which I have so largely quoted.

The Goldberg Case

—*New York Court of Appeals Defines "Occupational Disease"*—

WHAT constitutes an "occupational disease" under paragraph 28 of the amended schedule in the New York State Workmen's Compensation Law was definitely set by the New York Court of Appeals, January 11, 1938, in the case of *Goldberg* v. *Marcy Corporation* and the *Maryland Casualty Company* acting on an appeal from a decision of the State Industrial Board.

The opinion, by Mr. Justice Finch and concurred in unanimously, is as follows:

APPEAL from a judgment of the Appellate Division of the Supreme Court in the third judicial department, affirming an award of the Industrial Board.

FINCH, J. This is a workmen's compensation case. The Industrial Board made an award which has been affirmed by the Appellate Division, one justice dissenting.

The claimant was a cashier in a moving picture theatre. Her work involved selling tickets in a ticket booth in the street outside the lobby of the theatre. This booth was heated by an electric heater which the claimant could turn on and off as she wished. Her claim is that the alternate heat and cold caused blotches to appear on her limbs and caused her feet to become numb and weak. She complained about this condition to her employer, and he sent her to a physician. While on the way to the physician's office she claims that, due to the weakness of her feet, she fell, sustaining fracture of her left ankle.

The Industrial Board found "the injuries sustained by said Shirley Goldberg were accidental injuries and arose out of and in the course of her employment." and made an additional finding that "The disease from which said Shirley Goldberg was suffering was an occupational disease and was contracted by her within 12 months previous to

the date of her disablement, and was due to the nature of her employment and was characteristic of and peculiar to the employment in which she was engaged."

The question presented is whether the award may be sustained upon the ground of an accidental injury arising out of and in the course of her employment or upon the ground that it resulted from an occupational disease.

We take up first whether the award may be sustained upon the finding of occupational disease. This necessitates a consideration of the Workmen's Compensation Law (Cons. Laws, ch. 67) and its recent amendments. The original purpose of the law was to provide an insurance system to compensate employees for accidental injuries sustained in the course of hazardous employment. Included as accidents were certain occupational diseases which were specifically named. Section 3, subdivision 2, of the act provides that compensation may be had "for disabilities sustained or death incurred by an employee resulting from the following occupational diseases." This is followed by two parallel columns, one headed "Description of Diseases," and the other, "Description of Process." In the first column the disease is named or described, and in the second column, the process in which it must be contracted in order to make it compensable. Concededly the claimant does not come within the provisions of any of these 27 paragraphs. In 1935, however, a twenty-eighth paragraph was added. In the first column it reads "any and all occupational diseases;" in the second column, the process is described as "any and all employments enumerated in subdivision 1 of section 3 of this chapter." The subdivision referred to lists all the hazardous employments to which the Workmen's Compensation Law is applicable.

The contention is made that this paragraph 28 extends the Workmen's Compensation Law so as to make it applicable to any disease arising out of and in the course of the employment, just as it is applicable to any accident arising out of and in the course of employment. This in substance would make workmen's compensation the equivalent of life and health insurance.

The question is, to what diseases did the Legislature intend to apply workmen's compensation insurance when it added paragraph 28 to subdivision 2 of section 3.

The very wording of subdivision 2 and of paragraph 28 shows that they were not intended to apply to all diseases contracted during the course of the employment since both are limited to *"occupational diseases."* Moreover, the 27 paragraphs which precede paragraph 28 specifically list diseases which are peculiar to specific occupations; Therefore, the principle of *ejusdem generis* applies and paragraph 28 should be limited in a similar manner. Manifestly, it was not the intention of the Legislature to change the Workmen's Compensation Law from a statute affording protection to employees against the hazards of their occupation to a law insuring against diseases which might happen to be contracted while the employee was engaged in his occupation.

The questions which remain are what diseases arising out of the employment are occupational diseases and whether the claimant was afflicted by such a disease.

The Workmen's Compensation Law has not attempted to define diseases known as occupational diseases, but it has shown perhaps more clearly than by definition what is meant, by enumerating certain diseases in the first 27 paragraphs in section 3, subdivision 2. Each disease is linked with the process used by the employee by which the disease is caused, such as lead poisoning contracted in a process involving the use of or direct contact with lead. Every such disease is thereby required to be actually caused in the course of the employment and from the particular work the employee is performing. Certain sections of the statute refer to occupational diseases as those due to the nature of the employment and contracted therein, and expressly limit compensation to those diseases.

(§§ 39, 40). Thus an occupational disease is one which results from the nature of the employment, and by nature is meant, not those conditions brought about by the failure of the employer to furnish a safe place to work, but conditions to which all employees of a class are subject, and which produce the disease as a natural incident of a particular occupation and attach to that occupation a hazard which distinguishes it from the usual run of occupations and is in excess of the hazard attending employment in general. Thus compensation is restricted to disease resulting from the ordinary and generally recognized risks incident to a particular employment, and usually from working therein over a somewhat extended period. Such disease is not the equivalent of a disease resulting from the general risks and hazards common to every individual regardless of the employment in which he is engaged.

We have referred to an occupational disease as " . . . . the natural and unavoidable result of the conditions of the employment." (*Barrencotto* v. *Cocker Saw Co.*, 226 N. Y. 139, 143; *Matter of Lerner* v. *Rump Bros.*, 241 N. Y. 153, 155.)

Definitions of occupational disease similar to those above have been enunciated by courts of other States in construing like statutes. (*Madeo* v. *Dibner & Bros., Inc.*, 121 Conn. 664; *Dill* v. *Plain View Coal Co.*, 217 Iowa 827; *Victoria Sparkler & Specialty Co.*, v. *Francks*, 147 Md. 368; *Lobel* v. *William Bros.* 50 S. W. Rep. (2d) (Mo. App.) 710; *McNeely* v. *Carolina Asbestos Co.* 206 N. C. 568; *Industrial Co.* v. *Roth* 98 Ohio St. 34; *Seattle Can Co.* v. *Dept. of Labor*, 147 Wash. 303).

With this distinction in mind, we search the record to find if there is any evidence to show that the plaintiff was suffering from an occupational disease. Her occupation was that of handling cash and theatre tickets and it is obvious that this work in and of itself could not have caused the leg injury or disease. The "disease" which befell her, therefore, was caused not by the nature of her employment, but by the failure of her employer to furnish her with a proper and safe place in which to work. There being no evidence whatso-

ever to sustain the finding that the claimant contracted an occupational disease in the course of her employment, the award cannot be sustained on that ground.

The award, however, can be sustained on the ground of accidental injury arising out of and in the course of her employment. The fall occurred while the claimant, pursuant to the directions of her employer was on her way to the doctor. It is urged that an injury resulting from such a fall is not compensable, and we are referring to our ruling in *Matter of Andrews* v. *L. & S. Amusement Corp.* (253 N. Y. 97). In that case the claimant's injuries were the result of a fall, but the fall was caused by an epileptic fit which has nothing to do with the employment. In the case at bar the fall of the claimant was the result of weakness of her feet which was caused not by an internal disorder, disease or illness having no connection with her employment, but by the conditions of her employment. More analogous to the case at bar are *Matter of Unger* v. *N. Y. Sportwear Co.* (268 N. Y. 651) and *Matter of Pickerell* v. *Schumacher* (242 N. Y. 577), in which cases we affirmed awards granted to claimants who fell while on the street but in the course of their employment. There was evidence from which the Industrial Board was justified in finding that the claimant suffered accident injuries arising out of and in the course of her employment. *Matter of Younger* v. *Motor Cab Trans. Co.*, (260 N. Y. 396).

Order affirmed.

News Item!

(Special to The New York Times)

WASHINGTON, Feb. 27—Big industry has moved to extend the health benefits developed for workers in large manufacturing establishments to smaller plants which have not had the time or money to install them, the National Association of Manufacturers announced today.

CHARLES R. HOOK, president of the National Association of Manufacturers, reported the appointment of a nation-wide committee on healthful working conditions. Standards approved by such agencies as the American College of Surgeons, the National Bureau of Standards and the National Safety Council will help guide the work of the committee.

"One of the prime objectives of this new committee," he declared, "will be to make available to the small and medium-sized manufacturer the benefit of the experience and study of others in this important field."

The committee has FRANK PURNELL, president of the Youngstown Sheet & Tube Company, as Chairman, and H. C. BEAVER, president of the Worthington Pump & Machinery Corporation, Harrison, N. J., as Vice-Chairman.

DR. VICTOR G. HEISER, author of "An American Doctor's Odyssey," is consultant.

A general advisory committee to be selected from experts will be headed by DR. W. IRVING CLARK, personnel director of the Norton Company, Worcester, Massachusetts.

"During the past 25 years," said MR. HOOK, "there have been many developments which improved factory working conditions. Accomplishments in this direction stand among industry's foremost achievements. Naturally, the most rapid advance has been achieved in the larger companies which could afford to devote time and money to the intensive study of working conditions and the development of employee medical services."

Those who have accepted membership on the main committee include W. A. ANDERSON, president John A. Roebling's Sons Company, Trenton; ROBERT H. CABELL, president Armour and Company; S. BAYARD COLGATE, president Colgate-Palmolive-Peet Company, Jersey City; P. O. GEIER, chairman the Cincinnati Milling Machinery Company; CARL C. GIBBS, president National Malleable & Steel Castings Company, Cleveland; A. B. HANSON, executive vice-president Northern Paper Mills, Green Bay, Wis.; ALDUS C. HIGGINS, president Norton Company.

Also W. G. MARSHALL, vice-president Westinghouse Electric & Manufacturing Company, Pittsburgh; ERNEST MUEHLECK, president Keashey & Mattison Company, Ambler, Pa.; CHARLES B. NOLTE, president Crane Company, Chicago; LOUIS RUTHENBURG, president Servel, Inc., Evansville, Ind.; W. L. SETTLEMIRE, assistant to the president, Mount Vernon Car Manufacturing Company, Mount Vernon, Illinois; H. S. WHERRETT, president Pittsburgh Plate Glass Co.; JAMES C. SELF, president Matthews Cotton Mill, Greenwood, S. C.; F. B. DAVIS JR., president United States Rubber Company, New York City; AUGUST KOCHS, president Victor Chemical Works, Chicago; WALTER J. KOHLER, chairman of the board, Kohler Company, Kohler, Wis.; ALVAN MACAULEY, president Packard Motor Company; HIRAM S. RIVITZ, president Industrial Rayon Corporation, Cleveland, and BLAINE S. SMITH, president Universal Atlas Cement Company, New York City.

[NOTE: Of the 22 companies represented in this committee, 15 have Medical Departments now approved by the AMERICAN COLLEGE OF SURGEONS. See "Blue Book of Industry," page 131.]

Section on Railway Surgery

THE SECTION ON RAILWAY SURGERY, of the Southern Medical Association will hold its Annual Meeting in Oklahoma City, Oklahoma, November 15-18, 1938. DR. GEORGE A. TRAYLOR, of Augusta, Georgia, is Chairman of the Section; DR. OLIVER B. ZEINERT, of St. Louis, Missouri, is Vice-Chairman; and DR. JAMES W. DAVIS, of Statesville, North Carolina, is Secretary. The program of this meeting will be published in an early issue of INDUSTRIAL MEDICINE.

The profession is invited; the meeting will be of profound interest to *all* physicians and surgeons, as well as those engaged in railroad work.

Industrial Medicine and Surgery

—Abstracts of Papers and Discussions Presented at the Mid-Winter Meeting of the Chicago Society of Industrial Medicine and Surgery, February 14, 1938—

THE regular Mid-Winter Meeting of the Chicago Society of Industrial Medicine and Surgery was held on Monday, February 14, 1938, at 8:30 P.M. at the Medical and Dental Arts Building, 185 N. Wabash Ave., DR. CHARLES DRUECK, JR., being program chairman, and DR. FRED G. CARLS, President of the Society, presiding.

The subject of the program was the Workmen's Compensation Act, discussed in two phases: "Factors Determining Compensation from the Medical Viewpoint" by EDWARD C. HOLMBLAD, M.D., F.A.C.S., Regional Chief Surgeon Railway Express Agency and Consultant to Insurance Companies, and "Compensability of Injuries from a Legal Standpoint" by HENRY H. ROLFE, Past President Casualty Adjusters Association of Chicago. General discussion followed the presentation of these talks.

DR. HOLMBLAD commented on industrial medicine and surgery being recognized as a special field. The discussion of his subject was treated under three general headings, referring to (1) cases obviously compensable; (2) cases not obviously compensable; and (3) so-called problem cases. In those of the first group an obvious injury is demonstrable; cases in the second group involve many malingerers who allege conditions which are impossible, as later proved to be the case by thorough examinations and histories; the hardest test, as will be seen later in the discussion, comes in the group of problem cases.

It is rather difficult to understand the tendency to under-estimate disability by various surgeons—perhaps this occurs because of the enthusiasm of the surgeon to get the patient well and functioning as a producing unit. The essayist preferred Moorhead's method of the estimation of loss of function.

It is important to evaluate the significance of the injury, of various associated occurrences, details of the injury, results of all treatment, the specific form of treatment first rendered, and to establish "a reasonable story and sequence of events."

Considerable time was given to the discussion of various important details in the history of the problem case. The important points in the examination will vary according to the type of case —there is always the necessity for a careful examination and diagnosis and a minute consideration of associated pathology. The relationship of adequate laboratory work is also to be emphasized.

The speaker objected to the use of the expression "cerebral accidents," which has crept into the literature and is now being used by many writers and speakers. Confusion arises here because of the improper use of the word "accident," which connotation is not clear in the use of the expression.

The importance of what may be called "reasonable medical situations" cannot be overemphasized.

Checking the condition of the patient within a period of six, nine or 12 months (according to the case) after the awarding of compensation would be a valuable test of recovery. The speaker would like to see this procedure tried by various industrial commissions.

In conclusion, emphasis was placed upon consistent findings in the history, examination and diagnosis of compensation cases.

HENRY ROLFE developed the history of the compensation law in Illinois, and spoke of the necessity for legal interpretation of the law applying both to injuries and occupational diseases. His talk touched very largely upon the major problems of claim men.

During the first application of the compensation law, it was especially interpreted with regard to extra-hazardous employments, and later others were brought under the act.

The history of any given case is very important, and a consideration of the injury to the physical structure of the body is fundamental. It is essential to remember that disability must be determined regardless of underlying pathology.

In discussing the various diseases and injuries in relation to statutory regulations, it was pointed out that the principle of the cessation of aggravation of injury deserved a special consideration in various cases.

Among some of the detailed types of cases which were commented upon in discussing injuries "arising out of employment," were the following: injuries happening when going to and from work —injuries happening in conveyances—those happening adjacent to the usual work place or location —quarrels and assaults—horseplay—death occurring by lightning—unknown causes of death.

The problem of deciding who an employee is, is not as simple as may be supposed. Relative to this subject, the speaker discussed the relationship of officers in a company and the conditions under which officers are said to be employees.

In concluding the discussion of the "Compensability of Injuries from a Legal Standpoint," the speaker stated that the claim man's job is not as easy as it is often thought to be.

THE discussion of these two presentations was thorough and quite lengthy, and was participated in, among others, by DRS. FROST, HOLMBLAD, H. I. SMITH, HAMMOND, LEVEN, SLOBE, CHIVERS, and MR. ROLFE.

It was agreed that DR. HOLMBLAD'S idea on the misuse of the expression "cerebral accidents" is correct. A number of the discussants asked ques-

tions relative to specific cases. In each instance, the principle was emphasized (in the answer) that the deciding factor was the establishment of an injury to the physical structure of the body, although evidence of external trauma did not exist.

Dr. Holmblad alluded in the discussion to the method of estimation of disability according to Moorhead, with reference to fractures, in which method 20% is allowed for alignment and form, 20% for union, and 60% for function. This method was discussed at considerable length by several of the members of the society. Perhaps half of the discussion, occupying the latter part of the meeting, was taken up with the subjects of fractures and hernia. With regard to these subjects, it was pointed out that an important consideration in medical testimony is the formation of definite opinion as to the condition of the patient.

Factors of Compensability

—*From the Medical Point of View*—

Edward C. Holmblad, M.D., F.A.C.S.,
Chicago

With the advent of workmen's compensation laws in most states and now the formation of occupational disease acts in many of our states, the practice of industrial medicine and surgery is rapidly being recognized as a specialized field of medical practice. This means that the competent physicians and surgeons in industrial practice, who have been recognized as such by associations and societies of industrial practice, have added a specialized training and experience that gives them a clear and understandable knowledge of injuries and diseases occurring in industry.

As is true of any specialty, the industrial physician should have—and most frequently has—a basic and fundamental well-balanced medical education, internship, and early training experience. He should have, added to this, ability to take histories, examine patients, render excellent medical and surgical care, evaluate progress, and appraise disabilities and end results with the additional factors in mind that have a definite relationship to the workmen's compensation acts and occupational disease laws.

What are these factors that the industrial physician and surgeon must know and to which he must give due and fair consideration?

In the handling of these cases we may, for ease of consideration, divide them into three main groups or classes:

1. Those cases obviously compensable;
2. Those cases obviously not compensable; and
3. Problem cases where the compensability is obscured, doubtful, and not readily discernible.

In Group 1 fall those cases where patients have sustained injuries in the course of their employment, such as crushing injuries of extremities, falls from buildings or into elevator shafts, or where they are the victims of violence from machine accidents, burns, etc., seen promptly after the injury. Here it is only necessary to establish the fact that they were on duty or sent in by their employer.

In Group 2, those obviously not compensable, we find many patients definitely malingering. An example of this is the patient who comes to your office with a furuncle or boil on his neck or body and states he was injured just a few hours before. In such a case any reliable and honest physician can state that it is impossible for the amount of swelling, induration, inflammation and necrotic tissue found present to have occurred in the few hours alleged. One sees a patient with a large inguinal hernia extending into the scrotum and as large as a fist or grapefruit, and perhaps with the pigmentation and evidence that he has been wearing a truss, and still he claims he did not have the condition that morning or the day before. Obviously, this is not true. Another frequently observed case is the patient who presents himself or herself with varicose veins, with no objective evidence of injury such as black and blue discolorations or abrasions. They frequently say that these veins are the result of a recent injury, direct contusion, bruise, or bump. Obviously, these veins, some as large as lead pencils or your little finger, could not have occurred so recently as alleged, and again we can make the definite statement that it is not reasonably possible and, therefore, not compensable. Most of us have seen thrombosed piles or hemorrhoids, as to which the patient tried to tell us they were the result of a direct bump or a lifting effort, or caused by driving a truck.

All of these patients are not purposeful malingerers or fakers—many of them are the victims of ignorance about medical matters. They usually can be instructed, and most of them take such enlightenment kindly. It is our duty as competent physicians and surgeons to correct these misunderstandings and misconceptions every time we get a chance. A layman may think that a gonorrheal urethritis or epididymitis is the result of lifting, and in some cases family physicians confirm or permit such false ideas to continue without correcting them. Obviously, such conditions are not compensable.

It is in the Group 3, those known as problem cases, that we are put to our hardest test. Many of these cases are seen late; maybe weeks or months have elapsed before they are examined by the attending physician or consulting surgeon. They may have given adequate notice without receiving medical care or examination. Many of them are complicated by pre-existing diseased conditions all of which must be properly appraised and evaluated. We may be faced with the problem of degree of aggravation of a pre-existing diseased condition or deformity. These cases require an adequate time for study and consideration. They must be worked up carefully. To hurry over them by brief superficial history and examination is most frequently just as disastrous if not more serious than careless claim investigation. One must be interested in an impartial

study of the case and have the genuine desire to demonstrate and establish the true facts and diagnosis of the case. Every once in a while we run across a doctor who, for some reason I have never been able to understand, underestimates his disability periods or tries to minimize the extent of the injury or minimize his estimate of specific loss. Why he should do this is a mystery to me. The doctor did not injure the patient. He has nothing to gain by underestimating these conditions and it is the actual diagnosis, the true facts, and the accurate medical conditions present that claim departments are seeking.

THE history in these cases is very important:
First: Was there an accidental injury?

Give the patient an opportunity to state definitely if he thinks he was injured or not. This sometimes gives us a valuable clue as to the patient's attitude towards his condition. He may be honest enough actually to say he does not know but is interested in finding out the exact cause of his trouble.

Second: When, where and what were the exact mechanics of the injury?

These factors are very important in examining knee cases, for example, where one suspects a cartilage injury. If a person is injured it is reasonable to expect him to know when and where it occurred. If it was not sufficient in magnitude or occurrence to fix itself in the mind of the patient as a definite injury, how reasonable is it to consider it the causative or aggravating factor in the condition under consideration. Hesitation, uncertainty, delay in answering or confused statements as to the injury create a justifiable suspicion.

Third: What were the immediate effects of the injury?

Was there any bleeding? In cases of head injury was there a bona fida period of unconsciousness? What were the immediate objective findings of injury? These are all important factors in establishing a reasonable medical and causative relationship.

Fourth: Who saw the accident? Do their statements of the mechanics of the accident confirm and coincide with those of the patient?

Fifth: How soon after the injury was the patient disabled, and what did he do immediately after the injury?

This frequently gives us valuable data as to the magnitude and extent of the violence. Back injuries in which the patient continued at work without loss of time or even without a rest period, and which, at a time many weeks later, got worse and disabled should arouse the examiner's suspicion to the possibility of an osteoarthritis or toxic myositis as the fundamental cause of disability. Again in such a case of lifting effort if there is any plausible relationship of aggravation it is reasonable to expect such disability at the time or fairly close to the time of the alleged injury.

Sixth: When, where, and by whom was the first medical treatment given?

It is frequently desirable to refer to the doctor's first report and get a description of the condition when it was first seen. In some states, for a hernia to be considered compensable, the patient's condition must require medical treatment within a certain time. Here, then, the time element is considered very important as a factor determining compensability.

Seventh: At this time it is important to record the actual sequence of events in connection with the patient's injury and disability. This is important in such cases where recurrences take place or where new conditions may be claimed to be related to earlier injuries. For instance, in the case of infection in an extremity such as a hand or foot there may be a complete recovery. At a time six to eight or nine months later the same patient may get a new infection or even die from pneumonia. Here it is important to establish the degree of recovery by determining the last date of drainage or the last date of medical treatment or dressing. If a patient had an infected finger and at a time six to nine months later died, it is most important to know what his condition was in the meantime. There must be a reasonable chain of events and a reasonable sequence of stages of infection if one is to consider them at all compensable. When the finger has completely healed and an adequate period of complete recovery intervenes, then it is medically reasonable to say there is no causative relationship. If on the other hand the infected finger was followed by a cellulitis and a generalized sepsis and systemic infection and there were flare-ups and episodes of recurrences of the infection with no adequate period of total recovery then we must admit a reasonable relationship between the infected finger and the septic death. I like to ask myself, when considering this phase of the problem: "Is there a reasonable sequence of events and progressive stages between the primary injury and the present condition?"

Eighth: What is the present condition and what are the present complaints exactly defined, and how does the present condition compare with the primary condition?

An example of the importance of these factors in determining compensability is the usual long-drawn-out shoulder case. It may have been originally a contusion of the shoulder or a mild soft tissue shoulder sprain, and your later complaints may be lack of elevation of the arm at the shoulder, limitation of rotation, and other findings of a subdeltoid bursitis. Another example is the elderly patient with a fractured wrist who carries his arm in a sling for several weeks and then has his forearm in his coat or at his side for several weeks longer. Such patients frequently attribute the stiffness in the shoulder to the injured condition extending up the arm to the shoulder, rather than to the disuse brought about by the long period of immobilization. Again it is important to get all the complaints, as there may be a definite relationship between a group of presenting symptoms. Weakness, loss of weight, and vomiting may indicate a cancer of the stom-

ach. Thirst, fatigue, polyuria, and a slow-healing injured foot may be definitely connected as a diabetes condition.

Ninth: An important factor in the history is the record of previous illnesses, injuries, and similar conditions.

It pays to respect the statement of the patient who tells you he is worried that his injury might become infected, or that his injured knee or ankle might take a long time to recover. He may have had a similar experience before, and you may profit by trying to find out what delayed his previous recovery.

NOW that we have discussed the cardinal factors in the history of the problem case, our next steps is likewise just as important. This is the examination of the patient and his present condition. Complete and accurate diagnosis is absolutely necessary. The weight, temperature, pulse rate, blood pressure, and urine examinations are the least that should be routinely recorded of the general examination. Exhaustive examinations are sometimes necessary to establish the exact diagnosis. Take for instance the long-drawn-out low back or sacro-iliac case where it is not only necessary to have excellent x-rays and laboratory work but even the benefit of specialists to rule out foci of infection or associated pathology. Yet how important it is to have an accurate and complete diagnosis if we are going to be called upon to render our opinion as to whether a certain case is or is not compensable. One cannot render such an opinion honestly and competently unless he has done a careful and thorough examination and proved an exact and a complete diagnosis. Here we should be careful not to overlook associated pathology. A patient who has fallen 15 to 20 feet, lighting on his heels, may have a fractured os calcis which requires him to stay in bed several weeks, or he may have a fractured pelvis requiring him to stay in bed several months. When the patient starts sitting up or getting up in a wheel-chair he may first complain of back pain, and an accurate study may disclose a compression fracture of one of the vertebra that was not causing symptoms while the patient was confined to bed. To arrive at an accurate diagnosis, repeated careful examinations and x-ray, as well as adequate laboratory work, may be necessary to establish the true facts. Such a diagnosis should not only disclose the primary pathology but should also establish the secondary or associated pathology. The patient may have sustained a fall, injuring himself. It is most important to go back still further and sometimes establish the associated pathology, such as the existence of epilepsy and epileptic attacks as the reason the patient had the fall in the first place. One such patient fell while at work, sustaining a skull fracture. The final diagnosis, however, established the fact that the patient made an outcry, was seen to have a convulsive seizure with frothing at the mouth, and was known to have had epileptic attacks for years at a place of previous employment. Thus such factors must be considered in determination of compensability.

Again when we consider compensability from the standpoint of diagnosis we must have a diagnosis consistent with reasonable medical certainty. All of the history and physical findings, as well as the x-ray and laboratory findings, must fit properly into such a diagnosis just as accurately as a jig-saw puzzle. It must be medically reasonable.

There is one factor that can sometimes be used to determine compensability, but unfortunately it frequently comes too late to be considered in the settlement of the claim. I now refer to the therapeutic test of treatment or settlement. Geting the patient well by settlement of the claim is sometimes the best treatment. This is especially true in the treatment of the so-called traumatic neurosis, anxiety neurosis, and litigation neurosis. Even though late, this factor of recovery following settlement is most important in proving whether a case was or was not compensable. It appears to me that one of the best ways to determine the degree of partial permanent disability in such cases as aggravation of osteoarthritic backs would be to find out the degree of recovery six to nine or 12 months from the time of final settlement.

I have felt for a long time that our various industrial commissions are overlooking one of the best opportunities to study the correctness of their awards and decision by not checking the condition of the patient six to nine months or a year after the settlement. I believe this would be the best, most reliable and most valuable check-up on the correctness of their awards.

Case

HISTORY: S.W.B. is a single man, 24 years of age, employed as a leveler by a shoe company for approximately 10 months in the plant, working under a foreman by the name of ——. This patient did not give me a very reliable statement as to when his accident was supposed to have occurred. I gave him plenty of opportunity to remember what month, and what day it happened, and he stated that, to the best of his knowledge, it was sometime in April, May, or June of 1937. It is supposed to have occurred at 10:00 o'clock in the morning. He stated that it was in the blasting room of the plant, and he was putting dressing onto a belt, when his left hand was caught and was pulled around a 15-inch pulley, sustaining an injury to his left wrist. He stated there was some bleeding from an abrasion on the back of his hand, that he was sent to Dr. —— for examination, and that x-rays were made of his hand, and it was bandaged. He states that he was re-dressed at two-day intervals at the doctor's office and then once a week. He lost four days from work at the time of this injury. He thinks that he worked until July when he was laid off because of shortage of work. He has worked only occasionally since that time and his last treatment to date was given some two or three weeks after the injury.

Present complaints consist of pain and limita-

tion of extension and flexion of the left wrist, and the presence of a scar on the back of his hand.

Examination reveals that Mr. B is a fairly well nourished young man. He has entirely normal usage of his left shoulder, elbow, and normal pronation and supination of his forearm. In studying his wrist it is noticed that there is 30° limitation of extension of the left wrist when it is compared to the right; that he has normal flexion of the left wrist and normal lateral mobility. Circumferential measurements of the left wrist at the styloid process and at a point one-half inch distal to the styloid process of the ulna reveal no difference between the right and left wrist. The patient has entirely normal usage of his fingers and thumb.

X-rays were made of both wrists, in three views for comparative study, and these x-ray films reveal the presence of a marked change in the texture of the semilunar bone of the left wrist. This bone is distorted, which is particularly noticeable in its lateral view, and there are areas of condensation and areas of rarifaction in this semilunar bone. The margins of the bone are everywhere sclerotic, and the generalized density of the bone makes it stand out when compared to the other bones of the carpal region.

I have just received the films from Dr. —— taken apparently reasonably near the time of his injury.

One of the films had been marked August 9, 1937, and another study of the wrist was made on October 8, 1937. These films both demonstrate the change in shape and contour of the semilunar bone of the left wrist which have demonstrated to be present, and these changes are noted to be exactly the same degree as we have visualized them in the x-rays of December 24, 1937.

OPINION: This patient had an injury to his left hand and wrist which was associated with the loss of four days time from work. He continued at work thereafter as long as work was available. His limitation of movement in the wrist on the left hand is due to the change in the contour of the semilunar bone and the change in density and consistency of the semilunar bone. These are most plausibly explained on the basis of an old injury that occurred many years ago. The fact that x-rays of August 8, 1937, were taken reasonably close to the accident definitely establishes the fact that the condition of this bone on that date is exactly the same as it was on December 24, 1937, and these conditions could not have been caused by an injury as alleged and were not related to this later injury.

The temporary total disability period was four days.

Further medical care is not necessary. The conditions found present in the wrist at the present time, in my opinion, are not due to the accident of 1937, but due to an old injury to this bone many years ago.

I had intended saying something about factors determining compensability in cases of occupational diseases, but, as time will not permit, this will have to wait.

IN SUMMARY then, an accidental injury occurring at a definite time and place with definite mechanics in producing such injury, with objective findings of injury; the physician's objective findings at time of injury; a reasonable sequence in the progress of condition, with a present status consistent with the present symptoms and not modified by previous attacks or injuries, and a consistent accurate complete diagnosis are some of the factors one considers in determining the compensability of a given case.

Georgia Railroad Surgeons

THE Surgical Association of the Atlanta and West Point Rail Road Company, the Western Railway of Alabama, and the Georgia Railroad will hold its Eighteenth Annual Meeting at the Atlanta-Biltmore Hotel, Atlanta, Georgia, on Thursday, March 24, 1938. DR. J. R. GARNER, Atlanta, Georgia, is Chief Surgeon of these lines.

The officers of the Association for the present year are:

President: DR. RICHARD BINION, Milledgeville, Georgia.

Vice-President: DR. R. H. FIKE, Atlanta, Georgia.

Sec'y-Treas.: MRS. R. E. COOPER, Atlanta, Georgia.

The Executive Board is composed of:

DR. J. R. GARNER, Chairman.
DR. HUGH M. LOKEY, Atlanta.
DR. H. CLIFF SAULS, Atlanta.
DR. J. C. BLALOCK, Atlanta.
DR. JOHN P. GARNER, Atlanta.

Guest Speakers on the program will be: DR. O. C. WENGER, of the United States Public Health Service, and DR. W. J. LANCASTER, Superintendent and Medical Director, Relief Department, Atlantic Coast Line Railroad, Wilmington, North Carolina.

The Scientific Program will be as follows:

MORNING SESSION:

1. "Management of Eye Injuries by the Local Surgeon"—DR. M. F. COCHRAN, Newnan, Georgia.
To Open Discussion:
DR. EUGENE CALLAWAY, Selma, Alabama.
DR. A. H. STEVENS, Augusta, Georgia.

2. "Importance of Gentle but Thorough Treatment of Minor Cuts and Lacerations"—DR. C. S. JERNIGAN, Sparta, Georgia.
To Open Discussion:
DR. W. H. CLARK, LaGrange, Georgia.
DR. W. D. TRAVIS, Covington, Georgia.

3. "Importance of Early Care of Injuries"—DR. J. C. BLALOCK, Atlanta.
To Open Discussion:
DR. FLOYD W. MCRAE, Atlanta.
DR. W. C. MCGEARY, Madison, Georgia.

4. Address—DR. W. J. LANCASTER, Wilmington, North Carolina. Guest Speaker.

5. "Reporting an Unusual Kidney Injury"—DR. JOHN P. GARNER, Atlanta.
To Open Discussion:
DR. P. Y. DONALD, Selma, Alabama.
DR. K. E. FOSTER, College Park, Georgia.

6. "Conservative Surgery in Hand Injuries"—DR. J. S. HOLDER, LaGrange, Georgia.

To Open Discussion:

DR. C. S. YARBROUGH, Auburn, Alabama.

DR. J. L. PORTER, Rutledge, Georgia.

7. "Surgical Management of Head Injuries"—The President's Address — DR. RICHARD BINION, Milledgeville, Georgia.

To Open Discussion:

DR. ED. F. FINCHER, Atlanta.

DR. J. G. PALMER, Opelika, Alabama.

AFTERNOON SESSION:

8. "Sulfanilamide in Genito-Urinary Tract Infections"—DR. MONTAGUE L. BOYD, Atlanta.

To Open Discussion:

DR. W. CARTER SMITH, Atlanta.

DR. J. WEYMAN DAVIS, Athens, Georgia.

9. "Syphilis"—Address by: DR. O. C. WENGER, United States Public Health Service, Guest Speaker.

10. "Hypertension" — DR. V. P. SYDENSTRICKER, Augusta, Georgia.

To Open Discussion:

DR. H. CLIFF SAULS, Atlanta.

DR. W. W. HARPER, Selma, Alabama.

11. "Results of Roentgen Therapy in Essential Hypertension"—DR. F. P. BOSWELL, Montgomery, Alabama.

To Open Discussion:

DR. L. P. HOLMES, Augusta, Georgia.

DR. R. H. FIKE, Atlanta.

12. "Fracture-Dislocations of the Shoulder"—DRS. LAWSON THORNTON and CALVIN SANDISON, Atlanta, Georgia.

To Open Discussion:

DR. H. M. MICHEL, Augusta, Georgia.

DR. HARRY MOSES, Macon, Georgia.

At midday luncheon short talks will be made by DR. EUGENE E. MURPHEY, of Augusta; DR. GEORGE A. TRAYLOR, also of Augusta, and President of the Medical Association of Georgia; and DR. ED. H. GREENE, of Atlanta, President-elect of The Fulton County Medical Association. All three of these Doctors are members of the surgical staff of these railroads and of the Association.

Central States Society

THE Nineteenth Annual Meeting of the Central States Society of Industrial Medicine and Surgery will be held in Springfield, Illinois, Tuesday, May 17, 1938, in conjunction with the Annual Convention of the Illinois State Medical Society.

The program, under direction of DR. JAMES J. CALLAHAN, Program Chairman, will be as follows:

MORNING SESSION

1. "Medicolegal Aspects of Occupational Diseases," by C. O. SAPPINGTON, M.D., DR.P.H.

2. "Recognition of Early Tuberculosis in Industry," by JAMES A. BRITTON, M.D.

3. "The Industrial Solvents," by WILLIAM D. MCNALLY, M.D.

4. "Skin Infection in Industry, with Special Reference to the Value of Patch Tests," by CLEVELAND J. WHITE, M.D.

AFTERNOON SESSION

In conjunction with the Surgical Section of the Illinois State Medical Society:

1. "Traumatic Lesions of the Spleen," by CHESTER C. GUY, M.D.

2. "Injuries of the Right Upper Abdominal Quadrant," by PHILIP H. KREUSCHER, M.D.

Various sections of the Illinois State Medical Society's Convention will continue through Thursday noon, May 19, 1938. The membership of the Central States Society is invited to remain and visit the section of choice.

Important New Books

Review by

FREDERICK W. SLOBE, M.D., F.A.C.S.

Injection Treatment of Hernia

WITH the increasing interest exhibited in this subject, particularly during the past five years, it is fitting that DR. RICE has written a book on it as he has been closely identified with the recent advances made in the ambulant treatment of reducible hernia. Although many articles have been written concerning the injection method during the past five years, physicians who are truly interested obviously can obtain the information they desire much more readily from this book than from articles.

A rather complete historical summary of the injection method during the past century is given. Following this the author presents a brief classification of hernia. In this he says: "It is important to differentiate before starting treatment between a direct and indirect inguinal hernia." Although his points are well taken, many experienced surgeons do not share the author's optimism as to the ability of the examiner to differentiate pre-operatively between a direct and indirect hernia. There are those who contend that inability to accurately differentiate between the two is one objection to the injection method.

The section on anatomy and etiology is fairly well illustrated. The author holds to the prevailing accepted opinion that a pre-existing patent processus vaginalis is a prerequisite to the development of practically every case of indirect inguinal hernia. In the direct variety the author emphasizes the importance of poorly developed inguinal musculature and the atrophy of old age.

The chapter devoted to a discussion of trusses is excellent. This is a very worthy feature because truss-fitting plays so important a part in the procedure and many physicians do not have ready access to the type of information which DR. RICE furnishes in this chapter. The section on technique is complete and well illustrated. The author prefers the milder solutions such as sodium psylliate and the tannic acid-alcohol solutions, which is in accordance with the opinion held by most of the experienced investigators.

Complications and sequelae are dealt with quite adequately. On page 151 the author has a resume of 15 important points to bear in mind while conducting this treatment.

The author advises the wearing of a truss for at least three months following the last injection, and says that a few additional months when indicated are desirable. Although not stating so specifically, the impression is given that a period of truss wearing longer than this is inadvisable because of the harmful effects of truss pressure for too long a time. This is a point which is quite controversial at present. There are experienced investigators now who feel that the truss has to be worn almost indefinitely in order to avoid a high recurrence rate. If this rather pessimistic opinion held by certain qualified physicians is subsequently substantiated it may have a distinct bearing on limiting the future indications for this method.

The crux of the situation lies, of course, in the results. The author quotes such variable statistics as those of Wollerman with 94% cured in 1,042 hernias, as contrasting with Campos and Subirachs who report 31.6% cured out of 202 cases. Following a questionnaire sent out by the author to 23 physicians, 2,216 cases were reported, averaging 85% cured. In the author's own series the cures obtained were 97.6%. Unfortunately the exact period of elapsed time is not given, for there are those with experience who feel that most of the highly favorable statistics are based on too short a period of time and that many recurrences are taking place after the second year.

Results of the surgical method are also quoted, and it is doubtful whether the profession at large is really familiar with the recurrence rate following surgery. Anderson and Bissell are quoted as giving statistics of recurrences averaging 20% in a large series of operations at Johns Hopkins Hospital, Massachusetts General Hospital, and the Presbyterian Hospital of New York; also Taylor reports a series from Johns Hopkins Hospital between 1899 and 1918 with a recurrence rate of 5.6% for indirect inguinal hernias and 18.08% for direct inguinal hernias.

Some excellent photomicrographs are displayed in the chapter on histopathology, showing the gradual merging from the primary destructive and exudative phase into one of fibroplastic proliferation and subsequent scar formation. The necessity for an initial irritative mechanism for the stimulation of fibrous tissue growth is stressed.

Some interesting instances of patients operated upon after receiving a series of injections are given. Several patients were operated upon for a subsequent appendicitis and the internal opening of the sac was found completely shut off and the sac obliterated by fibrous adhesions. This is in line with the view that the success of the injection method is qualified upon a sealing of the internal ring, obliteration of the sac, and building up of the wall by fibrous tissue.

Twenty-one pages are devoted to medicolegal aspects of hernia, with a brief resume of the requirements of various states.

In closing, the author summarizes his viewpoints, technique, and results, ending with the statement that the injection method should be employed as it is intended, namely, as a "supplement to surgery."

The book is a valuable contribution to surgical literature, particularly for those who are interested in developing a comprehensive understanding of this method of treating hernia.

"Injection Treatment of Hernia," was written by CARL O. RICE, M.D., F.A.C.S., has 266 pages, and was published, in 1937, by F. A. Davis & Company, Philadelphia.

Review by

WM. D. MCNALLY, A.B., M.D.

General Hygiene and Preventive Medicine

THIS book, written by JOHN WEINZIRL and ADOLPH WEINZIRL, is divided into eight parts with several chapters under each subdivision. The authors state the book was written for the purpose of presenting preventive hygiene from the standpoint of the methods employed.

Hygiene is a French term derived from the Greek "hygies," meaning health. The progress of hygiene has been slow. The installation of real sewage systems did not occur until 1847 in London and 1855 in Chicago. The introduction of factory inspection cannot be definitely dated, but probably originated about 1832 when England enacted important factory legislation.

The book is easily read. It contains a great deal of valuable information not only for the medical students, nurses, and public health workers, for whom it was written, but also for the busy practitioner who is too busy to read the extensive literature upon the various phases of general hygiene and preventive medicine. It has taken in practically all the phases of the control of disease, such as immunization, the specific use of medicines and surgery, disease carriers, and sanitary, physical and social environment. Under Part V, in which the control of physical environment as a method of controlling disease is discussed, there will be found interesting phases of temperature, humidity, ventilation, and lighting. The attention of the industrial physician is being focused more each year upon these subjects. All phases of general and preventive medicine are covered briefly, but there is enough material given on each subject to stimulate the interest of the reader in this most important branch of medicine.

In the preface the authors state that they have avoided the use of technical terms as much as possible, leaving many occasions for the student to seek additional information from other sources. The manner of treatment of the various subjects is intended to be suggestive rather than exhaustive, yet sufficiently complete to afford a grasp of the fundamentals of preventive medicine.

The book contains 424 pages. It was published by Lea & Febiger, Philadelphia, in 1937, and is priced at $4.00.

Blue Book of Industry

— The Remarkable Development of an Adventure in Ideals —

AMERICAN COLLEGE OF SURGEONS has what it calls a "Minimum Standard for Medical Service in Industry." This is a summary of principles, in five small paragraphs; a terse and pointed specification, in 208 words.

For compliance with this Minimum Standard there is the COLLEGE's "Certificate of Approval," on which—beneath the Seal, and amid the little blocks of color surrounding the initials—the full text of the Standard is engrossed.

It is significant in this text that the word "shall" is employed seven times.

Now the word "shall," when it is brought to bear on industry, is usually mandatory. In the statutes industry must obey it is the essence of the law; in the rules and regulations by which industry is governed it makes them what they are; in the contracts to which industry is bound it defines the only course that will avoid the penalties of breach or added costs. In these respects industry submits when it must, and accepts when it needs—adapting itself to the law in the one relation, and the customer in the other. But only in these respects—for industry will not be dictated to, or bossed; and whoso, being neither law nor customer, says to it: "Thou shalt," must have a reason.

American College of Surgeons
Says to Business: "Shall . . . "
And Business Says: "So be it!"
Wherein there is the Story . . .
Of an Inspiration . . .
And the Genius . . .
And the Aids . . .
Who Made it Real

American College of Surgeons

THE AMERICAN COLLEGE OF SURGEONS was incorporated November 25, 1912, under the laws of the State of Illinois. The corporate objects and purposes are as follows:

"To establish and maintain an association of surgeons, not for pecuniary profit but for the benefit of humanity by advancing the science of surgery and the ethical and competent practice of its art; by establishing standards of hospital construction, administration and equipment, and all else that pertains to them; by engaging in scientific research to determine the cause, nature and cure of disease; by aiding in better instruction of doctors; by formulating standards of medicine, and methods for the improvement of all adverse conditions surrounding the ill and injured wherever found. To accomplish these benevolent and charitable aims, it shall be within the purposes of this corporation to use those means which from time to time may seem to it wise, including research, publication, education, the establishment and maintenance of libraries, museums, and other agencies or institutions appropriate hereto, and the cooperation of any other such activities, agencies or institutions already established or which may hereafter be established."

The net summary of all these carefully marshalled words is that the State of Illinois empowered a group of professional men, of limited means, and of no political significance, to engage in an enterprise of high idealism. Under such a grant, the entity which is their COLLEGE is about as far removed as any organization can be from the *legal* status that would enable it to impose its will outside of its own circumference.

Nor is there anything compelling in its financial status. The COLLEGE owns its property, on East Erie Street, in Chicago; has a permanent endowment fund, nearly all subscribed by its members; and owes no debts. But, as such things are reckoned in these times, it hasn't command of wealth in any meaning of the term that would interest a banker.

And its status as a factor in the world of trade is negligible —about as important to industry on the whole as that of the customer who drops in at the store for his daily cigarettes or his seasonal straw hat. There isn't enough in the purchasing power of either to make the world of commerce cock an ear were both to tell it: "shall . . . ."

Thus, in possibilities of *enforcing* anything on industry, the COLLEGE has the complete ineffectiveness of an high-perched aerie of monks on an inaccessible mountain top in far away Tibet.

Says to Business: "Shall . . . ."

HOW IS IT, then, that industry so generally, and so pridefully, displays the Certificate that proves, upon its face, submission when the COLLEGE says:

"1. The industrial establishment *shall* . . . "
"2. Membership on the medical staff *shall* . . . ."
"3. There *shall* . . . ."
"4. Patients requiring hospitalization *shall* . . . ."
"5. The medical department or service *shall* . . . ."

The Certificate is there.

You can see it as you go in—a little above head-high, on the long wall, where it is easily read—the emblem of the A.C.S. Approval.

This year there are 843 Approvals, in 319 cities in 41 States of the United States, in the District of Columbia, and in 11 cities in four of the Provinces of Canada.

If you were to visit all of those places and afterward add up the totals, you would have visited 843 medical departments established and maintained by 700 members of the industrial fraternity which is known as "big business"; and the place and proportion of the 700 in the aggregate of "industry" would be about as follows:

The Minimum Standard

1. The industrial establishment shall have an organized medical department or service, with competent medical staff including consultants, and also shall have adequate emergency, dispensary and hospital facilities and personnel to assure efficient care of the ill and injured.
2. Membership on the medical staff shall be restricted to physicians and surgeons who are (a) graduates from an acceptable medical school, with the degree of Doctor of Medicine, in good standing and licensed to practice in their respective states or provinces, (b) competent in the field of industrial medicine and traumatic surgery, (c) worthy in character and in matters of professional ethics; in the latter connection the practice of the division of fees, under any guise whatsoever, shall be prohibited.
3. There shall be a system of accurate and complete records filed in an accessible manner, such records to include particularly a report of injury or illness, description of physical findings, treatment, estimated period of disability, end-results, as well as other information pertinent to the case or required by statute for Workmen's Compensation claims or other purposes.
4. Patients requiring hospitalization shall be sent to institutions approved by the American College of Surgeons.
5. The medical department or service shall have general supervision over the sanitation of the plant and the health of all employees.

In that part of the economics of individual, community and national life wherein things are made, advertised, sold, bought, used, and depended on, the 700 are the recognized leaders. The fact of their leadership is variously compounded of elements which include size, facilities of manufacture, kind and availability of product, competitive characteristics, and general responsibility — all as related to the need, comfort, and convenience of the population. This is obvious from the mere list of names. As they are grouped, however, and studied in both individual and group significances, the list becomes impressively a counting of the captains.

Among the numerous statistical possibilities in this respect it may be noted that an average day's business on the New York Stock Exchange shows the securities of 25% of these companies bought and sold; that it is an unusual issue of *Saturday Evening Post* which hasn't a score or more of them among its advertisers; that four of the "big five" in national advertising are among them; and that the major portion of most of the kinds of material things an average person comes in sensory contact with during an average day involves their products. In all entitlements, they are the aristocrats of industry — provided only that there is such a thing as an "aristocratic" status that can be *earned* and *deserved*. For they are more than leaders in size; it is still the law of life that they could not be that without also being leaders in merit.

There is an absorbing interest in studying these names by groups. In the groupings, however, it is necessary to take the view of "industry" that coincides with general opinion. In fundamental concept, "industry" exists wherever there is the employment relation; that is the broad, and the ultimate, basis from which to make a definition. But it is too broad, and perhaps too theoretical, for the statisticians. And, because it is even broader than the scope of political "Social Security," it probably will not appeal to the Census abstracters for some time to come.

The Medical Departments which have the A.C.S. Approval may be grouped, therefore, with approximate relation to the Census classifications.

In this relation, the proportions of the Approvals found in the various kinds of industry, together with the percentage of the total of the gainfully employed who are occupied in each, can be seen at the bottom of this page. With nine exceptions, the 843 Approved Medical Departments are in six of the 10 Census classes. The exceptions are the seven Navy Yards, which are in "Public (Government) Service;" the one hotel which falls into "Personal Service;" and the single University, which is in "Professional Service." The six classes, therefore, comprising that part of the aggregate of all kinds of employment in which it is feasible to have medical departments, will be considered for this appraisal as constituting "industry." And thus 60% of the "gainfully employed," and 99% of the Approved Medical Departments are in it.

And within it, the following groupings —made for general interest rather than too careful accuracy as to correctness of classification — are revealing and impressive. They would be no less so in any arrangement.

It should be borne in mind in reading

The Employed and the ACS Approvals

Where the Employees Work:		Where the Approvals Are:
30%	Manufacturing and Mechanical Industries	80%
	Public Utilities	5%
16%	Trade	5%
9%	Transportation	5%
3%	Industry not Specified	3%
2%	Extraction of Minerals	1%
2%	Public (Government) Service	1%
21%	Agriculture	
10%	Domestic and Personal Service	
7%	Professional Service	
100%		100%

these groupings that no attempt is made to include *all* of the personal identifications with medical departments. The purpose is to name only enough of them to indicate the general size of the establishments in each group, and to serve—as a premise, perhaps—in the elaboration, later on, of the "theme and rhythm" of the logic that calls this article "Blue Book of Industry." That logic, however, may need no further comment if the reader will try to imagine, first—as to any group—an equal number of companies other than those in the A.C.S. list whose products or services are as well or better known, or as widely or more widely used; and, second, a situation in which it would be possible to live anywhere in the United States without depending, indirectly at least, on the services or products of *any* of the companies on this list.

And Business Says: "So be it!"

HERE, then, is a general and somewhat cursory, but very indicative, outline of several of the groups of industrial concerns which have sought the A.C.S. Approval, have been surveyed by representatives of the COLLEGE, and have adopted the Minimum Standard and agreed to maintain it.

STEEL

United States		22
Carnegie-Illinois	8	
Columbia	4	
American Bridge	3	
National Tube	2	
American Steel & Wire	2	
Universal Atlas Cement	2	
Tennessee Coal, Iron & Railroad	1	
Bethlehem		9
Republic		4
Youngstown Sheet & Tube		2
Weirton		2
Steel of Canada		2
Sharon		2
American Rolling Mill		2
Jones & Laughlin		2
Pittsburgh		2
Western Pipe & Steel of California		2
23 with 1 each		23
		74

AS TO the majority of its employees, the steel business is well represented. The plants are mostly large. This is apparent from Bethlehem Steel, for example, where DR. LOYAL A. SHOUDY is "Chief of Medical Service for 70,000 employees,"* and DR. FLOYD E. SHAFFER, at Sparrows Point, Maryland, is "Surgeon-in-Charge — of a Medical Department for 15,000 employees." Among other indications of the extent of the medical service in this kind of work are: DR. EARL V. MCCORMICK's "Medical Department for 8,000 employees" of Carnegie-Illinois Steel, at the Homestead Works; DR. H. S. MURAT's Medical Department for American Rolling Mill, at Middletown, Ohio, where he is "Chief Surgeon for 12,000 employees"; and DR. L. A. WHITAKER's Department for Weirton Steel at Weirton, West Virginia, where he is "Chief Surgeon for 13,000 employees." And the companies are important. Atlantic, American Sheet & Tin Plate, Inland, Newport, Eastern, Great Lakes, Halcomb, Corrigan-McKinney, Otis, Buckeye, Lukens, Niles, Wheeling, Interlake, Truscon, McKeesport, Allegheny, Standard, Pittsburgh, are among the names associated with the single Approvals. DR. WILLIAM O'NEIL SHERMAN is Chief Surgeon of Carnegie-Illinois Steel.

UTILITIES

Telephone and Telegraph, Electric Light, and Power, Gas, Water, Electric and Street Railways	62
	62

AT THE head of the utilities approved in respect of their Medical Departments by the AMERICAN COLLEGE OF SURGEONS, would be, of course, the American Telephone & Telegraph Company, of New York City, where, since 1915, the Medical Department "serving the associated Bell System Companies, whose total personnel aggregates about 300,000," has been in the charge of CASSIUS H. WATSON, M.D., F.A.C.S., "distinguished for his accomplishments in the development of, and emphasis upon, diagnostic work in industrial medicine and surgery."

Typical of the telephone company Medical Departments are:

DR. D. L. LYNCH's, for New England Telephone & Telegraph, where he is "Medical Director for 20,000 employees;"

DR. EDWARD S. MCSWEENY's, for New York Telephone, where he is "Medical Director for 45,000 employees;"

DR. GEORGE M. PIERSOL's, for Bell Telephone of Pennsylvania, where he is "Medical Director for 16,000 employees;" and

DR. WILLIAM CABELL MOORE's, at Chesapeake & Potomac Telephone, where he is "Medical Director for 10,000 employees."

The electric light companies include:

Commonwealth Edison, of Chicago, where DR. ARTHUR V. ALLEN is "Chief Surgeon for 10,000 employees;"

Brooklyn Edison—DR. H. M. HAMMOND's identification with a "Medical Department for 9,000 employees;" and

Edison Electric Illuminating, of Boston, where DR. NOEL G. MONROE is "Medical Director for 3,300 employees."

Among the gas companies are:

Consolidated Gas, of New York City, where DR. J. J. WITTMER is Medical Director and DR. NOEL E. ECKELBERRY Surgeon-in-charge, of a "Medical Department for 44,000 employees;" and

Peoples Gas, of Chicago, where DR. GEORGE H. MUSSELMAN is "Medical Director for 4,000 employees."

Electric transportation includes:

Pacific Electric, at Los Angeles, where DR. WILLIAM L. WEBER is "Chief Surgeon for 6,000 employees;" and

* The quotations regarding numbers of employees, etc., are from WHO'S WHO IN INDUSTRIAL MEDICINE AND TRAUMATIC SURGERY, 1936 Edition.

Chicago Rapid Transit and related companies, where DR. HART E. FISHER is "Chief Surgeon and Medical Director for 9,500 employees."

AUTOMOBILES

Ford		17
General Motors		32
Divisions	12	
Chevrolet	9	
Fisher Body	6	
Delco	2	
Canadian	2	
Buick	1	
Other Companies with 1 each		8
		57

DR. C. D. SELBY is identified with General Motors, at Detroit; and DR. ARLIE L. BROOKS is in charge of the Fisher Body Medical Department at Detroit—"for 45,000 employees;" and DR. R. D. MUDD, at Norwood, Ohio (Fisher Body, Chevrolet, and Parts, 3,000 employees); DR. MACK MCKINLEY SHAFER, at Dayton, (Frigidaire, 8,500 employees); and DR. FREDERICK B. WISHARD, at Anderson, Indiana, (Delco-Remy, 8,500 employees) are among the General Motors Division identifications. The Divisions also include A C Spark Plug, Saginaw Malleable Iron, Saginaw Steering Gear, New Departure (two Approvals), Olds Motor Works, and Hyatt Bearings.

The companies here, with one Approved Department each, are: Auburn, Chrysler, Dodge, Packard, Pierce-Arrow, Reo, Studebaker, White.

DR. JOHN W. HILBERT, as Medical Director of Studebaker, is "in charge of Medical Department for 7,500 employees."

DR. GRANT L. BIRD is Chief Surgeon for 3,500 employees of General Motors of Canada, at Oshawa, Ontario.

OIL

Standard Oil (New Jersey)	6
Standard Oil (California)	4
Standard Oil (Indiana)	3
Sinclair	3
Humble Oil	2
Union (California)	2
Other Companies with 1 each	14
	34

AT THE head of Standard Oil of New Jersey's Approved Departments is DR. WILLARD J. DENNO, who is "General Medical Director, in charge of the Medical Department of the company and its subsidiaries throughout the world, the Department for the company's 120,000 employees having 65 full-time physicians, three dentists, 94 nurses, 24 first aid men, nine pharmacists, 10 laboratory technicians, 20 native dressers, and 21 sanitary engineers; full-time medical organizations wherever in the United States the company has 500 employees or more in any local area; and hospital, housing, sewage disposal, water supply, mosquito control, and other necessary medical and sanitary facilities in foreign areas." The Medical Department with DR. MCIVER WOODY in charge serves 19,000 employees. Standard Oil (Indiana) Medical Department is in charge of DR. BRYCE B. REEVE, "Medical Director for 25,000 employees."

There are well-known names among the 14 oil concerns with one Approved Department each: Phillips, Gulf, Atlantic, Socony, Sun, Continental, Tide Water, Carter, Standard of Ohio.

Humble Oil's Medical Department at Houston, Texas, has DR. CHARLES M. AVES as "Medical Director, for 14,000 employees;" Carter Oil, at Tulsa, Oklahoma, has a Medical Department for 2,500 employees, in charge of DR. WILLIAM S. CRAWFORD; and DR. PHILLIP R. SUTHERLAND, at Los Angeles, is identified with Union Oil's Medical Department for 8,000 employees.

PACKING

Swift	12
Armour	8
Wilson	6
Other Companies with 1 each	8
	34

THE packers are mostly large employers—Armour and Company, for example, where DR. VOLNEY S. CHENEY is Medical Director "in charge of Medical Department for 60,000 employees."

Cudahy, Dold, St. Louis Independent, Iowa Packing, and United Dressed Beef are among the names identified with the single Approvals.

Swift, at South St. Paul, has DR. GEORGE C. H. ERNEST as Chief Surgeon "in charge of Medical Department for 2,400 employees." And Wilson, at Oklahoma City, has DR. NEIL W. WOODWARD as Medical Director in charge of its Medical Department for 1,000 employees.

CHEMICALS

Du Pont	14
Viscose	4
Monsanto	2
General Aniline	2
Others with 1 each	5
	27

TWO of the Approved Medical Departments associated with the du Pont name are included in Textiles—the du Pont Rayon Company, at Buffalo, and the one at Richmond, Virginia. The 14 Departments here include the du Pont dyes, chemicals, and plastics.

The companies with one Approval each are Mallinckrodt at St. Louis, Standard Phosphate & Acid at Baltimore, National Aniline & Chemical at Buffalo, Carbide & Carbon Chemicals at South Charleston, West Virginia, and American Cyanamid at Linden, New Jersey.

Probably National Carbon, Union Carbide and some others should be included here also.

At Parkersburg, West Virginia, the Viscose Medical Department is in charge of DR. ROBERT E. DAVIS, Medical Director for 5,500 employees;

Grasselli Chemical, at Cleveland, where DR. BRADFORD C. SCUDDER is Medical Director, has 5,000 employees; and National Aniline, at Buffalo, where DR. JOHN P. BOROSZEWSKI is Medical Director, 1,500.

RETAIL

Montgomery Ward	8
Sears Roebuck	7
Hudson Bay Company	3
Wanamaker	2
Macy	2
May	2
Others with 1 each	18
	42

ALL of the retail businesses with more than one Approved Medical Department are nationally known. This is also true of most of the 18 others with one Approval each—their names are familiar everywhere: Marshall Field; D. H. Holmes; Stix, Baer & Fuller; Brandeis, Bamberger; Gimbel; Stern. Macy's, New York, Approval is for the Department of which DR. MICHAEL LAKE is Medical Director—for 16,000 employees. And Bamberger's, at Newark, New Jersey, where DR. RALPH D. VREELAND is Medical Director, has 5,000 employees.

FOOD

National Biscuit	5
American Sugar Refining	4
National Sugar Refining	2
Washburn-Crosby	2
Pillsbury	2
Others with 1 each	17
	32

HEINZ, Campbell, Quaker Oats, Kraft, Kellogg, Shredded Wheat, Loose-Wiles, Quaker Maid, need only to be mentioned to bring quick pictures of nationally ubiquitous products; and Hershey and Whitman are so well identified with candy that the names with the possessive apostrophes are the full description.

At New York, DR. GEORGE A. KOENIG is Chief Surgeon for National Biscuit's 2,500 employees; and at Cedar Rapids, Iowa, DR. ROY K. KEECH is Surgeon for Quaker Oats, which has 1,400 employees at that plant.

RAILS

Railroads	26
Pullman	1
	27

THE twenty-six railroads which have the A.C.S. Approved Medical Departments comprise 54% of the total railway mileage of the United States, and employ about half of the somewhat less than a million railroad employees.

They are as follows:

Atchison, Topeka & Santa Fe; Atlantic Coast Line; Baltimore & Ohio; Central of Georgia; Chicago, Burlington & Quincy; Chicago, Milwaukee, St. Paul & Pacific; Chicago & North Western; Chicago, Rock Island & Pacific; Colorado & Southern; Denver & Rio Grande; Florida East Coast; Great Northern; Illinois Central; Lehigh Valley; Long Island Railroad; New York Central System; Norfolk & Western; Northern Pacific; Pennsylvania; Reading; Rutland; St. Louis-San Francisco; Southern Pacific; Texas & New Orleans; Union Pacific; Western Maryland.

PHARMACEUTICAL

Squibb	2
Others with 1 each	11
	13

ELI LILLY, Parke-Davis & Company, the Bauer & Black and Lewis Manufacturing Divisions of the Kendall Company, Johnson & Johnson, Ritter Dental, Calco Chemical, Emerson Drug, Sharp & Dohme, Frederick Stearns, Merck, are included, with Squibb's two Approved Medical Departments, in this group.

At Merck's, at Rahway, New Jersey, DR. JAMES M. CARLISLE is "Medical Director for 1,500 employees." And in Detroit, DR. VERNON S. LILLY is Chief Surgeon, in charge of the Parke-Davis Medical Department for 2,000 employees.

SOAP

Procter & Gamble	9
Others with 1 each	3
	12

LEVER BROTHERS, makers of Lifebuoy, and Colgate-Palmolive-Peet, and Larkin of Buffalo, are the soap companies with one Approved Medical Department each.

TEXTILES

American Woolen	3
Pacific Mills	2
Du Pont	2
30 with 1 each	30
	37

THE textile group includes du Pont Rayon, Real Silk Hosiery, American Woolen Company, National Silk Spinning, Cheney Brothers, and a number of mills.

At Cheney Brothers, South Manchester, Massachusetts, DR. ROBERT P. KNAPP, Medical Director, is "in charge of the Medical Department for 2,500 employees."

DR. BRENTON A. TILGHMAN is Medical Director for the 3,400 employees of du Pont Rayon at Richmond, Virginia;

DR. LAWRENCE O. CRUMPLER at Danville, Virginia, is Medical Director and Chief Surgeon for the 9,000 employees of Riverside & Dan River Cotton Mills; and

At Sylacauga, Alabama, Dr. F. H. Craddock is Medical Director and Chief Surgeon for the 3,400 employees of Avondale Mills.

AGRICULTURAL IMPLEMENTS

International Harvester	9
Others with 1 each	3
	12

James A. Britton, M.D., is Supervisor of Medical Service for International Harvester, "in charge of Medical Departments for 50,000 employees." (This company's report for 1937 showed that the number of employees averaged over 59,000 during the year.)

The companies with one Approval each are Deere & Company, Moline, Illinois, Minneapolis-Moline Power Implement Company, Minneapolis, and J. I. Case Company, Racine, Wisconsin.

At Moline, Dr. Emery B. Neff is Chief Surgeon for Deere & Company's 7,000 employees.

MISCELLANEOUS

Insurance	11
Mining	10
Banks	7
Navy Yards	7
Airplane	3
Steamship	2
Newspapers	2
News Syndicates	1
Stock Exchange	1
Hotel	1
University	1
Bus Line	1
	47

This is an interesting group. Its importance is obvious when the following names are noted. The insurance companies are:

Aetna Life and Affiliated Companies.
American Mutual Liability Insurance Company.
Employers Liability Assurance Corporation, Ltd., (Dr. Willis W. Lasher, Chief Surgeon).
Equitable Life Assurance Society of the United States.
Liberty Mutual Insurance Company.
Maryland Casualty Company, (Dr. Allen D. Lazenby, Chief Surgeon).
Metropolitan Life Insurance Company.
New York Life Insurance Company.
Prudential Insurance Company of America.
Travelers Insurance Company.
United States Fidelity & Guaranty Company.

The mining companies include:

Inspiration Consolidated Copper, and Miami Copper, (Dr. John E. Bacon, Medical Director and Chief Surgeon, 3,000 employees).
Nevada Consolidated Copper (Dr. Ralph Bowdle, Chief Surgeon).
Pittsburgh Coal Company.
Glen Alden Coal Company, (Dr. James N. White, Chief Surgeon, 41,000 employees).
Hudson Coal Company.
Lehigh Calley Coal Company.
Homestake Mining Company.
Utah Copper Company.
National Mining Company.

The banks are:

Wells Fargo Bank & Union Trust Company, San Francisco.
Federal Reserve Bank of Chicago.
Continental Illinois National Bank and Trust Company of Chicago.
Bankers Trust Company, New York.
Federal Reserve Bank of New York, (Dr. Mary M. Crawford, Medical Director, 2,400 employees).
J. P. Morgan & Co., New York.
National City Bank of New York.

The Navy Yards are situated at Mare Island; Washington, D.C.; Boston; New York; Philadelphia; Portsmouth, Virginia; and Puget Sound.

The airplane companies are: Douglas Aircraft, at Santa Monica, California, Wright Aeronautical, at Paterson, New Jersey, and Curtis Airplane & Motor, at Buffalo.

The steamship companies: Ocean, at Savannah, Georgia, and Southern Pacific Steamship Lines, at New York City.

The newspapers are: *New York Times*, and *Philadelphia Evening Bulletin*. And the syndicate is News Syndicate Co., Inc.

The stock exchange is the New York Stock Exchange, where Dr. F. H. Glazebrook is Medical Director "in charge of the Medical Department for 5,000 employees."

The hotel is the Palmer House, Chicago.

The university is Harvard.

And the bus line is Pacific Greyhound Lines, Inc.

MANUFACTURING

General Electric	10
Westinghouse	6
Lehigh Portland Cement	4
Western Electric	4
American Can	4
American Smelting & Refining	4
American Brass	3
Pullman Standard Car	3
12 with 2 each	24
283 with 1 each	283
	320

Grouping all the remainder under "Manufacturing," General Electric has 10 Approvals, and Westinghouse Electric & Manufacturing, six. Indicative of their importance may be cited the Approval of the Westinghouse Medical Department, at Pittsburgh, where Dr. T. Lyle Hazlett is Medical Director for 35,000 employees.

In this general classification there are numerous other interesting and important names:

In the movies, for example, Paramount has three Approvals, and Fox, Columbia, Universal, Metro-Goldwyn-Mayer, R.K.O. Studios, and United Artists each have one.

In shoes, International Shoe has two Approvals, and Endicott Johnson, United Shoe Machin-

ery, and Brown Shoe, each have one Approval.

Shipbuilding finds Bethlehem Shipbuilding with three, and four others with one each.

American Tobacco Company has two. Dr. Charles-Francis Long, at Philadelphia, is Medical Director for Bayuk Cigars, Inc., "in charge of Medical Department for 4,200 employees." And General Cigars has one Approval.

Refrigeration, in addition to Kelvinator and General Motors' Frigidaire, has Servel, at Evansville, Indiana, where Dr. Thomas Dobbins is Medical Director in charge of the Medical Department for 6,000 employees.

In glass, Libbey-Owens-Ford has two Approvals; Pittsburgh Plate Glass, two; Maryland Glass, one; Federal Glass, one; and Corning Glass also has one. At Corning Glass, Dr. Willis C. Templer is Medical Director, "in charge of Medical Department for 3,500 employees"; at Pittsburgh Plate Glass, Dr. Marlin W. Heilman is Chief Surgeon for 3,000 employees; and—if American Optical belongs in this group — Dr. Theodore L. Story is Medical Director at Southbridge, Massachusetts, in charge of Medical Department for 3,000 employees.

In paper there are 10 companies with Approved Medical Departments, including Bogalusa, American Writing Paper, Waldorf Paper Products, A. P. W. Paper, Champion Coated Paper, Hammermill Paper, Scott Paper—with Dennison Manufacturing in paper products, and Eberhard Faber in pencils. Dennison's Medical Department, at Framingham, Massachusetts is headed by Dr. Halstead G. Murray, Clinic Physician for 2,200 employees; and Hammermill's, at Erie, Pennsylvania, by Dr. James D. Stark, in charge for 1,500 employees.

Singer and White are on the housewifely list—with Clark Thread, and J. & P. Coats.

In publishing there are Curtis Publishing, Philadelphia, where Dr. Sidney J. Repplier, Medical Director, is in charge of the Medical Department for 4,000 employees; and Doubleday, Doran, at Garden City, New York.

In rubber, the Goodyear name is associated with three Approvals, Firestone with two, and Goodrich with two.

And among the 11 with one each are Samson, Gates, Kelly-Springfield, Converse, Hood, Dunlop, and Republic. The Medical Department of Firestone, at Akron, where Dr. D. M. McDonald is Medical Director, serves 12,000 employees; that of Goodyear, at Akron, where Dr. Paul A. Davis is affiliated, 15,000 employees; and that of Hood Rubber, at Watertown, Massachusetts, where Dr. Robert S. Quinby is Medical Adviser, 4,000 employees.

No less important are the other names. Like those singled out for mention in the foregoing, the ones not mentioned are still a catalog of standards.

Each conveys a story—starts its individual train of long association with something read about. seen, bought, known, used, depended on, preferred, and recommended; the list is an alphabet of leaders.

Thus, at random:

Aluminum, American Brass, American Can, Anaconda, Anheuser-Busch, Armstrong, Art Metal, Atwater-Kent, Automatic Electric;

Bakelite, Baldwin, Ball, Bausch & Lomb, Bendix, Brill, Bucyrus-Erie, Budd, Byers;

Campbell, Carborundum, Caterpillar, Cluett-Peabody, Colt, Coty, Crane, Crouse-Hinds, Cutler-Hammer;

Eastman; Fairbanks-Morse; Glidden; Heinz; Hudson Bay; Ingersoll, International Nickel; Johns-Manville; Kohler, Koppers; Landers, Frary & Clark, Link-Belt, Lycoming; National Cash Register, New Jersey Zinc; Otis Elevator; Prest-O-Lite, Pullman; R. C. A., Remington, Roebling;

Solvay, Spalding, Sperry, Standard Sanitary, Stanley, Stetson, Stromberg-Carlson;

Taylor Instrument, Teletype, Timken;

Union Switch & Signal, United Fruit, U. S. Playing Card;

Waterbury, Western Cartridge, Western Electric, Willard, Winchester; Yale & Towne.

Wherein there is the Story. . . .

THE relative extent of these medical services can be judged from the foregoing. Most of them are big; the 60 or so that are particularized have a total of more than a million employees. Dr. H. A. Vonachen's Medical Department, for the 14,000 employees of Caterpillar Tractor, at Peoria, or Dr. William A. Sawyer's, for the 13,000 employees of Eastman Kodak, at Rochester, would be about the average. Typical of the few that are not so big is that of Teletype, at Chicago, where Dr. Philip L. Jeppson is "Medical Director for 700 employees." Obviously, however, the Approvals list includes the majority of the larger employers; the element of size is considerably impressive.

But also obvious, and equally impressive, are the other factors—so much more important than mere size—which give this list its dominance. And paramount, and inevitable, throughout the list is the one factor that is common to all, the *quality* that pervades not only the business itself but also its products, and is the *sine qua non* of the successful management reflected in the fact of leadership—the kind of management that would want a medical department, and, having it, would desire that it conform to the accepted standard.

We have, therefore, the 700 companies, their size, their importance, and the phenomena of their economic reflections in the lives and affairs of the nation's people to the extent that makes their names and associations a matter of general and common knowledge. We have, also, the fact that they have Medical Departments. And thus far the aggregate may be taken for granted—with nothing to be especially remarked or wondered at.

But when these companies are thought about as being assembled in one list because of having the A. C. S. Certificate of Approval for their respective Medical Departments, that fact and its significance are almost startling. So much, so quietly done! One-fourth of the "industrial" 60% of all the gainfully employed already looked after under such a Standard! This field of *industrial* medicine. . . . it's an aristocrat on its own account! Then come the questions, such as: "Why the A.C.S. . . . ?"

And therein lies the story.

Ot an Inspiration. . . .

IT IS a story of vision, and of inspiration, vibrating in continual overtones the fine and tempered metal of a great, creative mind.

But it must be briefly told, and so it will be—following the thread of it through the books and records where the days and the events of stirring times are woven into the fabric of our national history.

From these sources, then, the following:

1913: IN THE evening of the fifth of May, 25 years ago, at a meeting of 450 of the outstanding surgeons of the United States, at the New Willard Hotel, Washington, D. C., the AMERICAN COLLEGE OF SURGEONS burgeoned into being. Among its first Governors was DR. FRANKLIN H. MARTIN, patient and far-visioned organizer, later to be its long-time Director-General.

The official seal that was adopted says, in Latin: *"To serve all with skill and fidelity."*

1914: MAGNUS ALEXANDER, President of the National Industrial Conference Board, in New York City, established the Conference Board of Physicians in Industry. This group was selected as an agency for the discussion by physicians in industry of their special problems, and to serve as adviser to the Conference Board on medical matters of importance to industry. The initial members—Medical Directors, Chief Surgeons, of their companies—had charge of medical matters for about three-quarters of a million employees. The Board, then and since, included the following:

ARTHUR V. ALLEN, M.D., Commonwealth Edison.
T. JOHN BOWES, M.D., Philadelphia Electric.
ORVIS A. BRENENSTUHL, M.D., Albany, N. Y.
H. E. BRICKER, M.D., Philadelphia Rapid Transit.
C. C. BURLINGAME, M.D., F.A.C.P., Hartford.
W. IRVING CLARK, M.D., F.A.C.S., Norton Co.
A. VERNON CLARK, M.D., Consolidated Gas.
R. R. CUMMINGS, M.D., Midvale Company.
W. B. FISK, M.D., International Harvester.
GEORGE H. GEHRMANN, M.D., F.A.C.P., du Pont.
OTTO P. GEIER, M.D., Cincinnati Milling Machine.
DONALD GUTHRIE, M.D., F.A.C.S., Lehigh Valley.
J. W. HARVEY, M.D., Tide Water Oil.
T. LYLE HAZLETT, M.D., Westinghouse Electric.
E. H. INGRAM, M.D., William Cramp & Sons.
J. A. JACKSON, M.D., Philadelphia.
ROBERT P. KNAPP, M.D., Cheney Brothers.
C. A. LAUSSER, M.D., Wilkinsburg, Pennsylvania.
S. M. MCCURDY, M.D., Youngstown Sheet & Tube.
J. J. MOORHEAD, M.D., F.A.C.S., New York.
HALSTEAD S. MURAT, M.D., American Rolling Mill.
VOYLE A. PAUL, M.D., Yale & Towne.
ROBERT S. QUINBY, M.D., Hood Rubber.
W. E. RAMSAY, M.D., Raritan Copper.
FRANK L. RECTOR, M.D., Evanston, Illinois.
WILLIAM A. SAWYER, M.D., Eastman Kodak.
F. E. SCHUBMEL, M.D., General Electric.
LOYAL A. SHOUDY, M.D., F.A.C.S., Bethlehem.
A. K. SMITH, M.D., du Pont.
WILLIS C. TEMPLER, M.D., Corning Glass.
CASSIUS H. WATSON, M.D., F.A.C.S., American Telephone & Telegraph.
J. J. WITTMER, M.D., Brooklyn Edison.
JOHN WOODMAN, M.D., United Electric.

1915: DRS. ANDREW HARVEY, THOMAS R. CROWDER, VOLNEY S. CHENEY, and HARRY E. MOCK, of Chicago, OTTO GEIER, of Cincinnati, WILLIAM A. SAWYER, of Rochester, and others decided to form a national association of industrial physicians and surgeons. They planned the organization meeting for June, of the following year.

1916: IN JUNE, the first Annual Meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS was held at Detroit. DR. JOSEPH W. SCHERESCHEWSKY, then Medical Officer in charge of Industrial Hygiene, U. S. Public Health Service, and active in the affairs of the American Public Health Association, was elected its first president.

In August, the Congress of the United States, anticipating that this country might become involved in the war then raging in Europe, created a Council of National Defense, to consist of six members of the Cabinet, and authorized an Advisory Commission "of not more than seven persons" of special qualifications in civilian life.

In October, DR. FRANKLIN H. MARTIN, Director-General of the American College of Surgeons, was appointed the member of that Advisory Commisson, for medicine and surgery. The other members of the Commission were DANIEL WILLARD, HOLLIS GODFREY, HOWARD COFFIN, BERNARD BARUCH, JULIUS ROSENWALD, and SAMUEL GOMPERS.

1917: MAGNUS ALEXANDER'S Conference Board began the study of medical services in industry, investigating health supervision, especially with regard to its cost.

The United States went into the war.

A meeting "of about 100 industrial surgeons" was held in Washington. In the words of DR. MARTIN: "We asked them to come together and make recommendations". This was the genesis of the Committee on Industrial Medicine and Surgery, of the General Medical Board of the Council of National Defense.

1918: THIS year opened with DR. FREDERIC A. BESLEY, of the AMERICAN COLLEGE OF SURGEONS, a member of the General Medical Board of the Council of National Defense and Medical Section of the Advisory Commission; and the Committee on Industrial Medicine and Traumatic Surgery, of that Board, fully organized and functioning, with the following membership:

JOSEPH SCHERESCHEWSKY, M.D., (Chairman);
MAGNUS ALEXANDER, West Lynn, Massachusetts;
OTTO P. GEIER, M.D., Cincinnati, Ohio;
HARRY E. MOCK, M.D., Chicago;
THOMAS F. LOGAN, Washington, D. C.;
CARL L. ALSBURG, M.D., Washington (Department of Agriculture);
W. H. DAVIS, M.D., Washington (Department of Commerce); and
VAN H. MANNING, Washington (Department of Labor).

Late in January this Committee made a report

which included an "Industrial Platform for Conservation of Health of the Industrial Army," as follows:

1. To provide against unnecessary human waste in industry and society during war.
2. To offset the drain on industry of man power, brought about by raising the military forces.
3. To meet the need for greatly increased production.
4. To avoid preventable deaths and disabilities from accident and disease.
5. To restore to full producing power in the shortest possible time sick and injured workers.
6. To increase output by maintaining workers in good health.
7. To provide healthful places in which to work.
8. To meet shortage of medical service induced by military needs.
9. To provide healthful homes and communities in which to live.

And DR. SCHERESCHEWSKY, in presenting the report, went on to say: "Such a program will require the earnest cooperation of three groups—the medical profession, the industries, and labor. Labor has in some instances in the past frowned upon medical supervision of the worker. Industry has often been blind enough to object to its cost. The profession has been slow to recognize that the field of the industrial surgeon and physician is legitimate and ethical . . . "

On May 5, at a meeting of the General Medical Board, DR. OTTO P. GEIER, speaking—as the historian says, "with enthusiasm"—on the subject of industrial medical organization, used these words: "I believe DR. MARTIN, in creating the Committee on Industrial Medicine and Traumatic Surgery . . ."

And at a later date, under the heading "Industrial Medicine and Surgery as a War Measure", the same recorder says:

"A comprehensive report, covering about every phase of the problem (of the Committee on Industrial Medicine and Surgery) with details of suggested procedure, was presented by the prospective director, DR. OTTO P. GEIER, of Cincinnati."

And the Genius . . . .

THE ARMISTICE, then, and an interim. The Committees adjourned *sine die*, and the members went back home:

DR. SCHERESCHEWSKY to become Assistant Surgeon General in Charge of the Division of Scientific Research, U. S. Public Health Service, and Medical Director of the U. S. Public Health Service Laboratory in cancer research, where he now is.

MAGNUS ALEXANDER to resume his Conference Board investigations of medical service in industry, and within the next few years put out a number of publications on the subject—through which some authentic and useful figures on costs were developed. Among these were:

"Health Service in Industry;"
"Cost of Health Service in Industry;"
"The Physician in Industry;"
"Relation of Medicine to Industry;"
"Medical Care of Industrial Workers;" and
"Medical Supervision and Service in Industry."

DR. OTTO GEIER to his work as Director of the Employees' Service Department, in charge of labor relations and employee medical matters, for the Cincinnati Milling Machine Company; later to become a member of the League of Nations Medical Commission, studying living and working conditions in foreign countries; but never to lose his vital interest in the growth and development of industrial medicine.

DR. HARRY MOCK to his practice, his teaching, and his writing, and to the completion and publication, in 1921, of his 850-page treatise on "Industrial Medicine and Surgery"—the first of its kind, and still the outstanding text on the subject;

And DR. FRANKLIN MARTIN to his place as Director-General of the American College of Surgeons.

FRANKLIN H. MARTIN was "an organizer, and leader of men; as a constructive dreamer, he had the courage, tenacity and insight to make his dreams materialize."

In his war work, as never before, he had demonstrated his ability to organize, and to lead.

And in his contacts with the leaders of business —and among these was WALTER GIFFORD, of A. T. & T., who was Executive Director of the Advisory Commission—he was given an insight into the qualities and the ways of "big" industry such as had never been the good fortune of an M.D. And in his contacts with the industrial medical men, whom *he* had called together, and whose aid *he* had enlisted, he was permitted an equally unusual insight into the hopes and aims and difficulties of the small, but capable and earnest, group who were making *industrial* medicine their careers.

Thus fortified, he allowed free rein to that quality of his which was no less than genius—his perception. "With dreamer's eyes" he saw a Minimum Standard for industrial medical service, and the leaders of industry rallying to it.

But . . . . who, or what, was big enough to raise it? Who was able to push it *high*, so all might see? Who was strong enough to make it strong, so all would follow?

And there was where his *genius* shone. For it was a work of genius to perceive that this Standard must be an expression not of law, or money, not of size, or profit, but of *ideals*. And these must be ideals of more than professional status. They must be adapted also to the supposed unidealism of business—in which "ethics" were not expected to exist, but in which he knew, first-hand, there lived, nevertheless, the forthright integrity of pioneer heritage and competitive survival.

And so he set about to make the AMERICAN COLLEGE OF SURGEONS so commanding within the scope of its charter purposes expressed, that its own professional integrity would be the most compelling of all possible means to this most idealistic of all possible ends.

During the next years he put the COLLEGE out in front in hospital standardization, and—in many other respects which are no part of this—brought its work into the finer consciousness both of the medical profession and its contacts. Indicative

along this line are his own words: "In 1922, DR. DANIEL Z. DUNOTT convinced the Association of Railway Executives that railway employees would receive the most efficient care in hospitals approved by the American College of Surgeons. Forthwith, by proclamation to the railroads, this association suggested that the employees of railroads, so far as possible and practicable should be treated in approved hospitals."

In the early 1920's he was ready to begin in the field of *industrial* medicine and surgery.

And when he began, he demonstrated again his ability as an organizer. For he drew from *all* the sources where he might find help, and heavily from that one source wherein it was to be expected he would find the most—the common ground of employer, labor, and insurance, engaged together in the employment relation. The following quick sketch attempts to indicate this; the sure and effective developments of the succeeding years are proof that it was wisely done:

And the Aids . . . .

AT THE Annual Meeting of 1926, in his report as Director-General, DR. MARTIN said: "The industries, labor, surgeons, hospitals, and the casualty companies who are earnestly seeking progress are in accord that a standard of methods of honesty and of efficiency for Traumatic Surgery, commonly called Industrial Surgery, should be worked out, promulgated, and by public opinion enforced, and that this important branch of surgery should be redeemed. For several years the AMERICAN COLLEGE OF SURGEONS has been studying the problem, and definite recommendations . . . were adopted on October 26, 1926."

The definiteness of the recommendations became apparent in the establishment of the A.C.S. Board on Traumatic Surgery. The personnel was:

FREDERIC A. BESLEY, M.D., F.A.C.S., identified with DR. MARTIN in the inception, organization, and conduct of *Surgery, Gynecology and Obstetrics*, and in the AMERICAN COLLEGE OF SURGEONS, where he has been continuously an officer and, at this writing, is President; identified with industrial medicine and surgery as Chief Surgeon for a number of companies at Waukegan, Illinois; and Chairman of the Board.

JOHN E. BACON, M.D., F.A.C.S., Medical Director and Chief Surgeon, Miami Copper and Inspiration Consolidated Copper, Miami, Arizona.

R. R. CORWIN, M.D., Pueblo, Colorado. (Since deceased.)

BOWMAN C. CROWELL, M.D., Associate Director of the COLLEGE, and Director of its Department of Clinical Research, who, prior to this affiliation in 1926, "had acquired an enviable reputation as a teacher of eminence," and since has demonstrated a remarkable administrative and executive ability. (The work of the COLLEGE in connection with the surveys and approvals of industrial medical departments has been under his direction from the start.)

DONALD GUTHRIE, M.D., F.A.C.S., Chief Surgeon, Lehigh Valley Railroad, Sayre, Pennsylvania.

LUCIAN H. LANDRY, M.D., F.A.C.S., Assistant Professor of Clinical Surgery, Tulane University of Louisiana School of Medicine, New Orleans.

ALLEN D. LAZENBY, M.D., F.A.C.S., Chief Surgeon, Maryland Casualty Company, Baltimore.

C. F. MARTIN, M.D., Dean and Professor of Medicine, McGill University Faculty of Medicine, Montreal, Quebec.

CHARLES H. MAYO, M.D., F.A.C.S., of Rochester, Minnesota, Professor of Surgery, University of Minnesota School of Medicine.

THOMAS G. ORR, M.D., F.A.C.S., of Kansas City, Professor of Surgery, University of Kansas School of Medicine.

WILLIAM O'NEIL SHERMAN, M.D., F.A.C.S., Chief Surgeon, Carnegie Steel Company, Pittsburgh.

ERNST A. SOMMER, M.D., F.A.C.S., Associate Clinical Professor of Surgery, University of Oregon Medical School, and Chief Surgeon, Pacific-Northwest Public Service Company.

FREDERICK J. TEES, M.D., F.A.C.S., of Montreal, member of the Industrial Medical Association of Quebec.

JOHN B. WALKER, M.D., F.A.C.S., Professor of Clinical Surgery, Columbia University, College of Physicians and Surgeons.

1927: THE Seventeenth Annual Meeting, at Detroit, in October, 1927, had a Symposium on Industrial Surgery, with WILLIAM GREEN, of the American Federation of Labor, JOHN M. GLENN, of the Illinois Manufacturers' Association, a number of insurance executives, and DR. LOYAL A. SHOUDY, Chief Surgeon of Bethlehem Steel, on the program.

The Board on Traumatic Surgery made a report "based on the findings of a committee of industrial surgeons and insurance representatives."

1928: THERE was an Open Forum and Symposium on Traumatic Surgery at the Eighteenth Annual Meeting, at Boston, in October. DR. SHOUDY, DR. LAZENBY, and DR. IRVING S. CUTTER, of Chicago, were on the program, with representatives of insurance companies, and of labor organizations.

1929: DR. SHOUDY was appointed to the Board on Traumatic Surgery.

The Nineteenth Annual Meeting, at Chicago, in October, had an Open Forum on Traumatic Surgery, with DR. FREDERIC A. BESLEY presiding, and FRED W. SLOBE, M.D., F.A.C.S., of Chicago, Chief Surgeon and Medical Director of a number of companies, C. F. N. SCHRAM, M.D., then Chief Surgeon, Fairbanks-Morse, CASSIUS H. WATSON, M.D., F.A.C.S., Medical Director, American Telephone & Telegraph, New York, VOLNEY S. CHENEY, M.D., F.A.C.S., Medical Director, Armour and Company, GEO. G. DAVIS, M.D., F.A.C.S., then Chief Surgeon, Illinois Steel, CLARENCE D. SELBY, M.D., then in industrial medical practice at Toledo, and HART E. FISHER, M.D., F.A.C.S., Chief Surgeon, Chicago Rapid Transit Company, on the program.

1930: SAMUEL R. CUNNINGHAM, M.D., F.A.C.S., of Oklahoma City, Professor of Orthopedic Surgery, University of Oklahoma School of Medicine, and LEO DRETZKA, M.D., F.A.C.S., of Chicago, were added to the Board on Traumatic Surgery.

The Twentieth Annual Session had a Conference on Industrial Medicine and Traumatic Surgery, with DR. CUNNINGHAM, and ARTHUR E. HOAG, M.D., F.A.C.S., Medical Director, Standard Oil Company of New York, SUMMER L. KOCH, M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School, and one of the editors of *Surg., Gynec. & Obst.*, WILLIS C. CAMPBELL, M.D., F.A.C.S., Professor of Orthopedic Surgery, University of Tennessee College of Medicine, JOHN S. COULTER, M.D., F.A.C.S., Associate Professor of Physical Therapy, Northwestern University Medical School, and GEORGE W. SWIFT, M.D., F.A.C.S., of Seattle, presenting subjects of industrial medical significance.

The Board of Traumatic Surgery adopted a Standard for Medical Service for Industries, Hospitals, Insurance Carriers, and others desiring recognition and approval by the COLLEGE.

1931: AGAIN, at the Twenty-First Session of the Clinical Congress, at New York in October, 1931, there was a Conference on Industrial Medicine and Traumatic Surgery. Among the speakers were J. J. WITTMER, M.D., Medical Director, Brooklyn Edison, LOYAL A. SHOUDY, M.D., F.A.C.S., Chief Surgeon, Bethlehem Steel, CASSIUS H. WATSON, M.D., F.A.C.S., Medical Director, American Telephone & Telegraph, HARVEY BARTLE, M.D., Chief Surgeon, Pennsylvania Railroad, WILLIAM R. CUBBINS, Consultant in Traumatic Surgery, Chicago, and last, but not least, HON. ALFRED E. SMITH, of New York.

The Board on Traumatic Surgery became the Board on Industrial Medicine and Traumatic Surgery.

1932: THE Twenty-Second Session of the Clinical Congress, at St. Louis, in October, 1932, had C. O. SAPPINGTON, M.D., DR.P.H., and FRED W. SLOBE, M.D., F.A.C.S., Chicago, and CAREY P. MCCORD, M.D., Medical Director, Industrial Health Conservancy Laboratories, Cincinnati, on the program of the Conference on Industrial Medicine and Traumatic Surgery.

The MINIMUM STANDARD FOR MEDICAL SERVICE IN INDUSTRY was presented, in almost its present form

DR. BESLEY'S report, for the Board on Industrial Medicine and Traumatic Surgery, said that the surveys of industrial medical departments had been begun, by DRS. WILLIAMSON and NEWQUIST, "two excellent men" employed for the purpose, and that 174 surveys were completed, with 84 departments approved.

1933: THE program on Industrial Medicine and Traumatic Surgery included FRED H. ALBEE, M.D., F.A.C.S., Consultant in Orthopedic Surgery, New York City, FREDERICK GAENSLEN, M.D., F.A.C.S., Professor of Orthopedic Surgery, University of Wisconsin Medical School, JOHN R. NILSSON, M.D., F.A.C.S., Associate Professor of Surgery, University of Nebraska College of Medicine, and Chief Surgeon, Union Pacific Railroad, and WILLIAM O'NEIL SHERMAN, M.D., F.A.C.S.

The report on the COLLEGE'S surveys of industrial medical departments was made by DR. WILLIAMSON. The number was 375, with 127 approvals.

1934: THE "first list of approved medical services in industry" was published. There were 975 surveys, with 518 approvals.

The Board on Industrial Medicine and Traumatic Surgery was increased by the addition of BRUCE D. CAMPBELL, M.D., of the Ford Motor Company, Dearborn, GEORGE W. SWIFT, M.D., F.A.C.S., of Seattle, JAMES F. CHURCHILL, M.D., F.A.C.S., of San Diego, California, S. MARK WHITE, M.D., F,A.C.P., of Minneapolis, and G. H. GEHRMANN, M.D., F.A.C.P., Medical Director of E. I. du Pont de Nemours & Co., Wilmington, Delaware.

1935: DRS. R. R. SAYERS, of Washington, SIDNEY WALKER and MICHAEL L. MASON, of Chicago, and LOYAL A. SHOUDY, of Bethlehem, were on the program of the Conference on Industrial Medicine and Traumatic Surgery, at the Twenty-Fifth Annual Session at San Francisco.

DR. NEWQUIST reported on the 1935 survey of medical services in industry. The number of surveys was 1,122, with 622 medical departments approved.

In March, DR. MARTIN died. The work he had begun so ably and directed so well went on.

1936: The surveys grew to 1314; the Approvals to 712. DRS. CAREY P. MCCORD, and PHILIP H. KREUSCHER, were named to the Board on Industrial Medicine and Traumatic Surgery.

1937: The Approvals reached the number listed in the following pages. There were 1,657 surveys.

1938: DRS. CASSIUS H. WATSON, Medical Director, A. T. & T., JOHN J. PENDERGAST, Medical Director, Chrysler Corporation, and PAUL B. MAGNUSON, of Chicago, were appointed to the Board—now the Committee—on Industrial Medicine and Traumatic Surgery.

Who Made it Real

THE reality of this undertaking needs no words to make it strong, no praise to make it definite. From every angle, in every relation, it is the most important and most significant single accomplishment in the history of industrial medicine and surgery. And no small part of its significance lies in the fact that it has been done without publicity, without propaganda, quietly—almost unobtrusively. Its character and extent are evidence that it has been effectively, as well as wisely, done.

There can be no detraction in the comment that it might also have been easily done because the "big" companies already had medical departments and were looking for some such thing as the Standard. The answer to that is the present situation: the COLLEGE is being increasingly besought by the *smaller* companies "Come and give us a survey!" No doubt the majority of its work from now on will be among the smaller companies. It will be as successful there as it has been among the larger, for much has been learned, and everything the COLLEGE has and knows and is able to do is available to industries without regard to size, and *at no cost* to the industry that wants it.

With all the idealism, however, there is the "steel hand in the velvet glove." The certificate must not only be obtained, it must also thereafter be continually *earned*. "The industrial medical services are resurveyed at intervals and are considered for rating annually. A service once approved will not necessarily remain so. The names of all establishments are automatically removed from the Approved List on October 1 and they are immediately reconsidered for a new rating, each establishment being evaluated on its own merits.

"Approval has been discontinued for a small number of industrial organizations this year on account of failure to comply with the requirements of the Minimum Standard.

"Others have so improved their organization and service during the past year as to merit full approval.

"The number of new establishments surveyed during the past year has not been as large as in former years. More attention has been directed to the organizations already surveyed in which there was not only the opportunity but an urgent need for constructive work."

The work of the COLLEGE, thus, is but begun. As the years go on there will be more, and many more, Approvals, reaching farther and farther into the problems of the smaller situations and the economics that limit the medical representation to part-time instead of full-time. And there will be the inevitable result of better executive appreciation. The official concurrences in the surveys made and the Certificates given heretofore were *not* delegated to the personnel manager, but there are too many smaller concerns where such an officer still has charge of medical matters. The trend, however, is toward the higher authority, the president's office. The COLLEGE can talk to presidents. Further it has become interested in industrial medical details in respects that interest presidents. Its Board on Industrial Medicine and Traumatic Surgery knows more about *costs* of medical services than any other individual or group. Its interest, and its opportunities, are such that the National Industrial Conference Board, which studied these costs for many years, has recognized the logic of the COLLEGE's position as to this kind of study, and, as it were, has handed over the torch. And other details have their place in the scope of the Board's activities—for example, the medical examination forms, which were developed after the study of literally many thousands of forms elsewhere produced. (See the pages following the list.)

But even so, with all of this done and doing, the fair evaluation of the work of the COLLEGE must consider the double phase that the results already accomplished and the place already reached have put a solid footing *under*, and a strong back-bone *into*, the field of industrial medicine and surgery as a matter of the past, and have raised a Standard round which all can rally secure in the knowledge that it is held by hands that are capable of holding it up. For the industries which have complied with the Standard and are maintaining their status as A.C.S. Approved, there is nothing more — except to view the Minimum Standard as a minimum and build above it. For the industries which have not complied with the Standard, it is there—to be aspired to, and reached, and made a source of that kind of industrial pride so much in evidence in the present list—the pride in employee relations that transcends profit.

The Minimum Standard was conceived and developed in an atmosphere that was made and kept *industrial*, with the aid and cooperation of *industrial* men. That it was the AMERICAN COLLEGE OF SURGEONS which raised it up is no more than was to be expected from *"Omnibus per artem fidemque prodesse."*

The combination is such that industries are very willing to say: "So be it!" when the COLLEGE tells them: "Shall!"

Without doubt—if eventualities are the tests of motives—FRANKLIN MARTIN had this in mind when he wrote into the articles of incorporation of the COLLEGE: "by formulating standards of medicine, and methods for the improvement of all adverse conditions surrounding the ill and injured wherever found." At any rate it is a dream fulfilled, along with others of his dreams—so constructive and yet practical, so ideal and yet real that they would live in their spirit even if they had no tangible expression. The eventualities, evidenced by the list which follows, are such that the Minimum Standard for Medical Service in Industry and its acceptance by the industries which stand Approved, are among the major accomplishments of a major institution in the medical profession—and are, themselves, a challenge to both medicine and business to extend the Minimum Standard to *all* employment.

Year by Year

Year	Surveys	Approvals
1932	174	74
1933	375	127
1934	975	518
1935	1122	622
1936	1314	712
1937	1657	843

The Accolade

The Certificate of Approval given the Medical Departments complying with the Minimum Standard for Medical Service in Industry of the AMERICAN COLLEGE OF SURGEONS is reproduced—smaller than actual size—on the opposite page.

In its nature, this Certificate is not an award, as medal, or prize. On the contrary, it is the evidence, at one and the same time, of something done and yet to be done; of a status reached but still to be maintained. It is to *have*, and, having it, to *hold*.

AMERICAN·COLLEGE·OF·SVRGEONS

HAS·APPROVED·THE·MEDICAL·SERVICE·OF

(_____)

WHICH·HAS·COMPLIED·WITH·THE·MINIMVM·STANDARD·FOR MEDICAL·SERVICE·IN·INDVSTRY·OF·THE·AMERICAN·COLLEGE OF·SVRGEONS·AS·FOLLOWS:

I

THE industrial establishment shall have an organized medical department or service with competent medical staff including consultants and also shall have adequate emergency, dispensary and hospital facilities and personnel to assure efficient care of the ill and injured.

II

MEMBERSHIP on the medical staff shall be restricted to physicians and surgeons who are (a) graduates from an acceptable medical school, with the degree of Doctor of Medicine, in good standing and licensed to practice in their respective states or provinces, (b) competent in the field of industrial medicine and traumatic surgery, (c) worthy in character and in matters of professional ethics; in the latter connection the practice of the division of fees, under any guise whatsoever, shall be prohibited.

III

THERE shall be a system of accurate and complete records filed in an accessible manner, such records to include particularly a report of injury or illness, description of physical findings, treatment, estimated period of disability, end results, as well as other information pertinent to the case or required by statute for Workmen's Compensation claims or other purposes.

IV

PATIENTS requiring hospitalization shall be sent to institutions approved by the American College of Surgeons.

V

THE medical department or service shall have general supervision over the sanitation of the plant and the health of all employees.

THIS·CERTIFICATE·GRANTED·BY·AVTHORITY·OF·THE·BOARD OF·REGENTS·OF·THE·AMERICAN·COLLEGE·OF·SVRGEONS

_____
President

_____
Chairman Board on Industrial Medicine and Traumatic Surgery

_____
Director General

An Adequate Industrial Medical Service Requires:

1. A definitely organized plan for the medical service.
2. A definitely designated staff of qualified physicians, surgeons, and attendants.
3. Adequate emergency, dispensary, and hospital facilities.
4. Pre-employment and periodic physical examinations—to be made only by qualified medical examiners.
5. Efficient care of all industrial injuries and occupational diseases.
6. Reasonable first aid and advice for employees suffering from non-industrial injuries and illnesses while on duty.
7. Education of the employee in accident prevention and personal hygiene.
8. Elimination or control of all health hazards.
9. Adequate medical records, accessibly filed in the medical department under responsible medical supervision.
10. Supervision of plant sanitation and all health measures for employees by the physician or surgeon in charge.
11. An ethical and cooperative relationship with the family physician.
12. The use of approved hospitals.

Industrial Medical Departments Having ACS Approval

UNITED STATES

(In the second column the States are arranged in the order of their industrial importance)

Alabama	14	New York	128
Arizona	2	Pennsylvania	115
Arkansas	—	Ohio	52
California	50	Illinois	55
Colorado	8	Massachusetts	49
Connecticut	28	Michigan	30
Delaware	3	New Jersey	55
District of Columbia	5	Indiana	28
Florida	1	California	50
Georgia	10	Wisconsin	10
Idaho	—	Connecticut	28
Illinois	55	North Carolina	1
Indiana	28	Missouri	23
Iowa	8	Georgia	10
Kansas	5	Texas	9
Kentucky	3	Maryland	34
Louisiana	5	Tennessee	4
Maine	12	Rhode Island	10
Maryland	34	Alabama	14
Massachusetts	49	Virginia	11
Michigan	30	Washington	3
Mississippi	—	South Carolina	—
Missouri	23	Minnesota	13
Minnesota	13	Louisiana	5
Montana	—	West Virginia	9
Nebraska	7	Iowa	8
New Mexico	—	Kentucky	3
Nevada	1	Maine	12
New Hampshire	2	Oregon	5
New Jersey	55	New Hampshire	2
New York	128	Florida	1
North Carolina	1	Mississippi	—
North Dakota	—	Kansas	5
Ohio	52	Arkansas	—
Oklahoma	8	Colorado	8
Oregon	5	Oklahoma	8
Pennsylvania	115	Nebraska	7
Rhode Island	10	Vermont	4
South Carolina	—	Delaware	3
South Dakota	1	Idaho	—
Tennessee	4	Utah	4
Texas	9	Montana	—
Utah	4	Arizona	2
Vermont	4	District of Columbia	5
Virginia	11	South Dakota	1
Washington	3	Wyoming	1
West Virginia	9	New Mexico	—
Wisconsin	10	North Dakota	—
Wyoming	1	Nevada	1

CANADA

Alberta	3	Ontario	10
Manitoba	3	Quebec	1

ALABAMA — 14

BESSEMER
- *Pullman-Standard Car Mfg. Co.

BIRMINGHAM
- Alabama Power Company
- American Cast Iron Pipe Co.
- Lehigh Portland Cement Co.
- *McWane Cast Iron Pipe Co.
- *Stockham Pipe & Fittings Co.
- Tennessee Coal, Iron & Railroad Company

GADSDEN
- *Goodyear Tire & Rubber Co., of Alabama
- *Republic Steel Corporation

MOBILE
- Alabama Dry Dock & Shipbuilding Company
- Southern Kraft Corporation
- *Todd Shipbuilding & Dry Dock Co., Inc.

SYLACAUGA
- *Avondale Mills

WOODWARD
- Woodward Iron Company

ARIZONA — 2

INSPIRATION
- Inspiration Consolidated Copper Co.

MIAMI
- Miami Copper Company

CALIFORNIA — 50

CROCKETT
- California and Hawaiian Sugar Refining Corporation, Limited

CULVER CITY
- *Metro-Goldwyn-Mayer Corporation

EL SEGUNDO
- Standard Oil Co. of California

EMERYVILLE
- Paraffine Companies, Inc.

LONG BEACH
- *Ford Motor Company
- *Procter & Gamble Mfg. Company

LOS ANGELES
- Atchison, Topeka & Santa Fe Railway System, Coast Lines
- *Columbia Pictures Corporation
- Firestone Tire & Rubber Company of California
- *Fox Film Corporation
- General Petroleum Corporation of California
- Goodyear Tire & Rubber Company of California
- May Company
- Metropolitan Water District of Southern California
- Pacific Electric Railway Company
- Pacific Goodrich Rubber Company
- Paramount Productions, Inc.
- *R.K.O. Studios, Inc.
- Samson Tire & Rubber Corporation
- Sears, Roebuck and Co.
- Southern California Telephone Co.
- Standard Oil Co. of California
- *Union Oil Company of California
- *United Artists Studio Corp., Ltd.
- *Western Pipe & Steel Company of California
- *Wilson & Co., Inc.

MARE ISLAND
- Navy Yard

OAKLAND
- *Chevrolet Motor Company
- *Fisher Body Oakland Division, General Motors Corporation
- Montgomery Ward & Co.

PITTSBURG
- Columbia Steel Company

RICHMOND
- *Ford Motor Company
- Standard Oil Company of California

SAN FRANCISCO
- Associated Oil Company
- *Bethlehem Shipbuilding Corporation, Columbia Steel Company
- Market Street Railway Company
- Pacific Greyhound Lines, Inc.
- Pacific Telephone & Telegraph Company
- Southern Pacific Company
- Standard Oil Company of California
- Wells Fargo Bank & Union Trust Co.
- Western Sugar Refinery

SANTA MONICA
- Douglas Aircraft Company, Incorporated

SOUTH SAN FRANCISCO
- *Pacific Coast Steel Corporation
- *Western Pipe & Steel Company of California

TORRANCE
- Columbia Steel Company
- *National Supply Company

UNIVERSAL CITY
- *Universal Pictures Corporation

WILMINGTON
- *Union Oil Company of California

COLORADO — 8

DENVER
- Colorado & Southern Railway
- Denver & Rio Grande Western Railroad
- Denver Tramway Company
- Gates Rubber Co.
- Montgomery Ward & Co.
- Public Service Company of Colorado
- *Swift & Company

PUEBLO
- Colorado Fuel & Iron Co.

CONNECTICUT — 28

BRIDGEPORT
- *Bassick Company
- Bridgeport Brass Company
- General Electric Company
- Remington Arms Company, Incorporated
- Singer Manufacturing Co.
- Stanley Works, American Tube & Stamping Plant

BRISTOL
- New Departure Division, General Motors Corporation

HARTFORD
- Aetna Life Insurance Company and Affiliated Companies
- Colt's Patent Fire Arms Manufacturing Company
- Hartford Electric Light Co.
- Travelers Insurance Company

MERIDEN
- New Departure Division, General Motors Corporation

NEW BRITAIN
- Landers Frary & Clark
- North & Judd Mfg. Co.
- Stanley Rule & Level Plant
- Stanley Works

NEW HAVEN
- *National Folding Box Company
- Sargent & Company
- Seamless Rubber Co.
- Winchester Repeating Arms Company

SOUTH MANCHESTER
- Cheney Brothers

STAMFORD
- Yale & Towne Manufacturing Company

THOMPSONVILLE
- Bigelow-Sanford Carpet Co., Incorporated

TORRINGTON
- *American Brass Company

WATERBURY
- American Brass Company
- Chase Companies, Incorporated
- Ingersoll-Waterbury Co.
- Scovill Manufacturing Company

DELAWARE — 3

EDGE MOOR
- du Pont, E.I., de Nemours & Company

NEWPORT
- du Pont, E.I., de Nemours & Company

WILMINGTON
- du Pont, E.I., de Nemours & Company

*Provisional Approval

DISTRICT OF COLUMBIA..... 5

WASHINGTON
Chesapeake and Potomac Telephone Companies
*Lansburgh & Bro.
Navy Yard
Washington Gas Light Company
*Woodward & Lothrop

FLORIDA 1

ST. AUGUSTINE
Florida East Coast Railway

GEORGIA 10

ATLANTA
*Atlantic Steel Company
Chevrolet Motor Company
*Exposition Cotton Mills
*Georgia Power Company, Railway Department
*Sears, Roebuck and Co.

GAINSVILLE
Chicopee Manufacturing Corporation of Georgia

MACON
*Bibb Manufacturing Company
*Procter & Gamble Mfg. Company

SAVANNAH
Central of Georgia Railway
Ocean Steamship Company

ILLINOIS 55

CHICAGO
Armour and Company
Automatic Electric Company
Bauer & Black, Division of The Kendall Company
Chicago, Aurora & Elgin Railroad
Chicago, Burlington & Quincy Railroad
Chicago, Milwaukee, St. Paul and Pacific Railroad, Eastern Lines
Chicago & North Western Railway
Chicago North Shore & Milwaukee Railroad
Chicago Rapid Transit Company
Chicago, Rock Island & Pacific Railway Company
Chicago South Shore & South Bend Railroad
Commonwealth Edison Company
*Continental Illinois National Bank and Trust Company of Chicago
Crane Co.
*Federal Reserve Bank of Chicago
Ford Motor Company
General Household Utilities Company
*Illinois Bell Telephone Company
Illinois Central Railroad
Carnegie-Illinois Steel Corporation
Interlake Iron Corporation
International Harvester Company,
McCormick Works
*Tractor Works
West Pullman Works
*Wisconsin Steel Works
Marshall Field & Company
Montgomery Ward & Co.
National Biscuit Company
Palmer House
Peoples Gas Light & Coke Company
Procter & Gamble Mfg. Company
Public Service Company of Northern Illinois
Pullman Company
Pullman-Standard Car Mfg. Co.
Sears, Roebuck and Co.
Standard Oil Company (Indiana)
Swift & Company
Teletype Corporation
Western Electric Company
*White Cap Company
*Wilson & Co., Inc.

DECATUR
Staley, A. E., Manufacturing Company

EAST ALTON
Western Cartridge Company

MOLINE
Deere & Company

MONSANTO
*Monsanto Chemical Works

NATIONAL STOCK YARDS
Swift & Company

NORTH CHICAGO
*Oakes Products Corporation

OGLESBY
*Lehigh Portland Cement Co.

PEORIA
Caterpillar Tractor Co.

ROCKFORD
Ingersoll Milling Machine Company

ROCK ISLAND
International Harvester Company
*Rock Island Sash & Door Works
*Servus Rubber Co.

WAUKEGAN
Griess-Pfleger Tanning Co.
Johns-Manville Products Corporation

INDIANA 28

ANDERSON
Delco-Remy Division, General Motors Corporation

BUFFINGTON
Universal Atlas Cement Co.

CONNERSVILLE
*Auburn Automobile Company

EAST CHICAGO
du Pont, E. I., de Nemours & Company, Grasselli Chemical Department
Youngstown Sheet & Tube Company

EVANSVILLE
Servel, Inc.

FORT WAYNE
General Electric Company
International Harvester Company

GARY
American Bridge Company
Carnegie-Illinois Steel Corporation

INDIANA HARBOR
Inland Steel Company

INDIANAPOLIS
Chevrolet Commercial Body Division, General Motors Corporation
Kingan & Co.
Lilly, Eli, and Company
Link-Belt Company
National Malleable and Steel Castings Company
Prest-O-Lite Company, Inc.
Real Silk Hosiery Mills, Inc.

MICHIGAN CITY
Pullman-Standard Car Mfg. Co.
Sullivan Machinery Company

MISHAWAKA
Mishawaka Rubber & Woolen Mfg. Co.

MUNCIE
Ball Brothers Company
Delco-Remy Division, General Motors Corporation
Warner Gear Company

RICHMOND
International Harvester Company

SOUTH BEND
Bendix Products Corporation
Studebaker Corporation

WHITING
Standard Oil Company (Indiana)

IOWA 8

CEDAR RAPIDS
Quaker Oats Company
Wilson & Co., Inc.

DES MOINES
Iowa Packing Company
Northwestern Bell Telephone Company

MASON CITY
Jacob E. Decker & Son

OTTUMWA
*John Morrell & Co.

SIOUX CITY
Armour and Company
Swift & Company

KANSAS 5

IOLA
Lehigh Portland Cement Company

KANSAS CITY
*Colgate-Palmolive-Peet Company
Procter & Gamble Mfg. Company
Swift & Company
Wilson & Co., Inc.

KENTUCKY 3

LOUISVILLE
Ford Motor Company
Standard Sanitary Mfg. Company, Inc.

NEWPORT
Newport Rolling Mill Company

LOUISIANA 5

BOGALUSA
Bogalusa Paper Company, Inc.
Great Southern Lumber Co.

NEW ORLEANS
American Sugar Refining Company
Holmes, D. H., Company, Ltd.
New Orleans Public Service, Inc.

MAINE 12

BIDDEFORD
*Pepperell Mfg. Co.
Saco-Lowell Shops
*York Manufacturing Co.

CUMBERLAND MILLS
*S. D. Warren Co.

LEWISTON
Androscoggin Mills
*Bates Mfg. Co.
Lewiston Bleachery and Dye Works

RUMFORD
Continental Paper & Bag Corporation
Oxford Paper Company

SANFORD
*Goodall Worsted Co.
Sanford Mills

WATERVILLE
Hollingsworth & Whitney Company

MARYLAND 34

BALTIMORE
*Abell, A. S., Company
American Can Company, Maryland Plant
American Sugar Refining Company
Baltimore & Ohio Railroad
Baltimore Copper Smelting & Rolling Company
Bethlehem Shipbuilding Corp., Ltd.
Campbell Metal Window Corporation
Chesapeake and Potomac Telephone Company of Baltimore City
Consolidated Gas, Electric Light & Power Company of Baltimore
*Crown Cork & Seal Company, Inc.
*Eastern Rolling Mill Company
Emerson Drug Company
Fairfield Western Maryland Dairy
*Federal Tin Company
Hutzler Brothers Co.
Koppers Company,
American Hammered Piston Ring Division
Bartlett Hayward Division
Maryland Casualty Company
*Maryland Glass Corporation
May Company
Montgomery Ward & Co.
National Enameling & Stamping Company
Procter & Gamble Mfg. Company
Revere Copper & Brass Incorporated
Schluderberg, The Wm.,—T. J. Kurdle Co.
Standard Oil Company of New Jersey
*Standard Wholesale Phosphate & Acid Works, Inc.
United States Fidelity & Guaranty Company
Western Electric Company
Western Maryland Railway

CUMBERLAND
Celanese Corporation of America
*Kelly-Springfield Tire Co.

SPARROWS POINT
*Bethlehem Steel Company

UNION BRIDGE
Lehigh Portland Cement Company

MASSACHUSETTS 49

BEVERLY
United Shoe Machinery Corporation

BOSTON
American Mutual Liability Insurance Company
Boston Elevated Railway
Edison Electric Illuminating Company of Boston
Liberty Mutual Insurance Company
Navy Yard

New England Telephone & Telegraph Company
United Fruit Company

CAMBRIDGE
*Boston Woven Hose & Rubber Co.
Harvard University
Lever Brothers Company

CHARLESTOWN
Revere Sugar Refinery

CLINTON
Wickwire Spencer Steel Company

EAST WALPOLE
Bird & Son, Incorporated

EVERETT
Colonial Beacon Oil Company, Inc.

FALL RIVER
American Printing Company

FRAMINGHAM
Dennison Manufacturing Co.

HOLYOKE
American Writing Paper Company, Inc.
Farr Alpaca Company
National Blank Book Company
William Skinner & Sons

LAWRENCE
American Woolen Company
Arlington Mills
Pacific Mills

LEOMINSTER
du Pont, E. I., de Nemours & Company, Plastics Department

LOWELL
Merrimack Manufacturing Company

LUDLOW
*Ludlow Manufacturing Associates

MALDEN
Converse Rubber Company

NEW BEDFORD
*National Silk Spinning Company
*Wamsutta Mills

NORTH PLYMOUTH
*Plymouth Cordage Company

PITTSFIELD
*General Electric Company

QUINCY
Bethlehem Shipbuilding Corporation, Ltd.

SALEM
*Naumkeag Steam Cotton Co.

SOUTH BOSTON
American Sugar Refining Company

SOUTHBRIDGE
American Optical Company

SPRINGFIELD
*Fiberloid Corporation
Moore Drop Forging Company
Spalding, A. G. & Bros.
United American Bosch Corporation
Westinghouse Electric & Manufacturing Company

WALPOLE
Lewis Mfg. Co., Division of The Kendall Company

WATERTOWN
Hood Rubber Company, Inc.

WEST LYNN
General Electric Company

WORCESTER
American Steel & Wire Company
Crompton & Knowles Loom Works
Graton & Knight Company
Norton Company
Whittall, M. J., Associates Ltd.

MICHIGAN 30

BATTLE CREEK
Kellogg Company

BAY CITY
Chevrolet-Bay City, Division General Motors Corporation

DEARBORN
Ford Motor Company,
Highland Park Plant
River Rouge Plant
Lincoln Motor Car Company

DETROIT
Budd, Edward G., Manufacturing Co.
Budd Wheel Company
Detroit Edison Company
Dodge Brothers Corporation, Division of Chrysler Corporation
Fisher Body Detroit Division, General Motors Corporation
Frederick Stearns & Company
Hudson, The J. L., Company
*Kelsey-Hayes Wheel Company
Kelvinator Corporation
Michigan Bell Telephone Company
Packard Motor Car Company
Parke, Davis & Company
*Timken-Detroit Axle Company
*United States Tire Company

ECORSE
Great Lakes Steel Corporation

FLINT
A C Spark Plug Company, Division General Motors Corporation
*Buick Motor Company

GRAND RAPIDS
American Seating Company

JACKSON
*Reynolds Spring Company

LANSING
Olds Motor Works, Division, General Motors Corporation
*Reo Motor Car Company

PARCHMENT
*Kalamazoo Vegetable Parchment Co.

SAGINAW
*Saginaw Malleable Iron Division, General Motors Corporation
*Saginaw Steering Gear Division, General Motors Corporation

MINNESOTA 13

DULUTH
American Steel & Wire Company
Universal Atlas Cement Co.

MINNEAPOLIS
Minneapolis-Moline Power Implement Company
Northwestern Bell Telephone Company
Pillsbury Flour Mills Company
*Sears, Roebuck and Co.
Washburn Crosby Co., Inc.

ST. PAUL
Great Northern Railway
Montgomery Ward & Co.
Northern Pacific Railway
*Waldorf Paper Products Company

SOUTH ST. PAUL
*Armour and Company
*Swift & Company

MISSOURI 23

KANSAS CITY
*Ford Motor Company
Kansas City Power & Light Company
*Loose Wiles Biscuit Company
Montgomery Ward & Co.
Sears, Roebuck and Co.
Southwestern Bell Telephone Company

ST. LOUIS
Anheuser-Busch, Inc.
Brown Shoe Company
*Century Electric Company
Chevrolet Motor Company of St. Louis
Crunden Martin Manufacturing Co.
Famous-Barr Company, May Department Stores Co.
Fisher Body St. Louis Division, General Motors Corporation
Ford Motor Company
International Shoe Co.
Mallinckrodt Chemical Works
Monsanto Chemical Works
Procter & Gamble Mfg. Company
St. Louis Independent Packing Company
St. Louis-San Francisco Railway
Southwestern Bell Telephone Company
Stix, Baer & Fuller Company

SUGAR CREEK
Standard Oil Company

NEBRASKA 7

OMAHA
American Smelting & Refining Co.
Armour and Company
*Brandeis, J. L., & Sons
*Dold Packing Company
Northwestern Bell Telephone Company
Swift & Company
Union Pacific System

NEVADA 1

McGILL
Nevada Consolidated Copper Corporation

NEW HAMPSHIRE 2

DOVER
Pacific Mills, Cocheco Division

MANCHESTER
International Shoe Co.

NEW JERSEY 55

ARLINGTON
du Pont, E. I., de Nemours & Company, Plastics Department

BAYONNE
Standard Oil Company of New Jersey
*Tide Water Oil Company

BAYWAY
Standard Oil Company of New Jersey

BLOOMFIELD
Chevrolet-Bloomfield, Division of General Motors Corporation
General Electric Company
General Motors Parts Corporation
Westinghouse Electric & Manufacturing Company

BOUND BROOK
*Bakelite Corporation
Calco Chemical Company, Inc.

BURLINGTON
*Devlin, Thomas, Manufacturing Co.

CAMDEN
Campbell Soup Company
Evans, John R. & Company
R C A Manufacturing Company, Inc.

DELAIR
Kieckhefer Container Company

EDGEWATER
Ford Motor Company
National Sugar Refining Company of New Jersey

ELIZABETH
Diehl Manufacturing Company
Singer Manufacturing Co.

FAIRVIEW
Bellman Brook Bleachery Co.

GRASSELLI
General Aniline Works, Inc.
du Pont, E. I., de Nemours & Company, Grasselli Chemical Department

HARRISON
*Driver-Harris Co.
Hyatt Bearings Division, General Motors Corporation

HOBOKEN
United Dry Docks, Incorporated

JERSEY CITY
American Can Company, Hudson Factory
*Armour and Company
Standard Oil Company of New Jersey
Swift & Company

KEARNY
Western Electric Company

LINDEN
*American Cyanamid Company

MANVILLE
Johns-Manville Corporation

MILLVILLE
*Millville Manufacturing Co.

NEWARK
*American Can Company
Bamberger, L. & Co.
Clark Thread Company
*Hollander, A., & Son, Incorporated
New Jersey Bell Telephone Company
Prudential Insurance Company of America
Westinghouse Electric & Manufacturing Company

NEW BRUNSWICK
Johnson & Johnson

ORANGE
Monroe Calculating Machine Company

PASSAIC
United States Rubber Products, Inc.

PATERSON
Wright Aeronautical Corporation

PAULSBORO
Socony-Vacuum Oil Company, Incorporated

PENNS GROVE
du Pont, E. I., de Nemours & Company, Dye Works

PERTH AMBOY
American Smelting & Refining Co.
*General Cable Corporation

*Raritan Copper Works
POMPTON LAKES
du Pont, E. I., de Nemours & Company
RAHWAY
Merck & Co., Inc.
ROEBLING
John A. Roebling's Sons Company
TRENTON
John A. Roebling's Sons Company
Sloane-Blabon Corporation
*Thermoid Company

NEW YORK 128

ALBANY
A. P. W. Paper Co.
Huyck, F. C., & Sons, Kenwood Mills
New York Power & Light Corporation
AMSTERDAM
Bigelow-Sanford Carpet Co., Inc.
Mohawk Carpet Mills
AUBURN
International Harvester Company
BINGHAMPTON
Agfa Ansco Corporation
BROOKLYN
American Can Company
American Manufacturing Company
American Sugar Refining Company
Atlantic & Pacific Tea Co., Brooklyn Roasting Plant, 45 Washington St.
Boorum & Pease Company
Brooklyn-Manhattan Trans't System
Chelsea Fibre Mills
Eberhard Faber Pencil Company
Kirkman & Son, Inc.
New York Telephone Company
Quaker Maid Company, Inc., Factory No. 1
Sperry Gyroscope Company, Inc.
Squibb, E. R., & Sons
United Dry Docks, Incorporated
BUFFALO
American Brass Company
American Radiator Company
*Buffalo Forge Company
Chevrolet Motor Company of Buffalo
*Curtis Aeroplane & Motor Co., Inc.
Dold, Jacob, Packing Co.
*Dunlop Tire & Rubber Company
du Pont Rayon Company, Inc.
Fedders Manufacturing Co., Incorporated
Fisher Body Company, Division General Motors Corporation
Ford Motor Company
Houde Engineering Corporation, Division of Houdaille-Hershey Corporation
Larkin Co., Inc.
National Aniline & Chemical Company, Incorporated
National Biscuit Company
New York Telephone Company
Pierce-Arrow Motor Car Company
Pillsbury Flour Mills Company
Republic Steel Corporation
Washburn Crosby Company, Inc.
Worthington Pump & Machinery Corporation
CORNING
Corning Glass Works
CORTLAND
*Wickwire Brothers
ENDICOTT
Endicott Johnson Corporation
International Business Machines Corporation
GARDEN CITY
*Doubleday, Doran & Company, Inc.
HASTINGS-ON-HUDSON
Anaconda Wire & Cable Company
JAMESTOWN
Art Metal Construction Company
LACKAWANNA
Bethlehem Steel Company
LAUREL HILL, L. I.
Nichols Copper Company
LONG ISLAND CITY
Macy, R. H. & Co., Inc.
National Sugar Refining Co. of New Jersey
MARINERS HARBOR, S. I.
Procter & Gamble Mfg. Company
NEW YORK
American Telephone & Telegraph Company
Bankers Trust Company
Bell Telephone Laboratories
Bloomingdale's
Consolidated Edison Company of New York, and Affiliated Companies
Coty, Inc.
Employers Liability Assurance Corporation, Ltd.
Equitable Life Assurance Society of the United States
Federal Reserve Bank of New York
*Gimbel Brothers
*Heide, Henry, Inc.
Horn & Hardart Company
Interborough Rapid Transit Company
International Telephone & Telegraph Corporation
Long Island Railroad
Macy, R. H., & Co., Inc.
Metropolitan Life Insurance Company
Montgomery Ward & Co.
Morgan, J. P., & Co.
National Biscuit Company
National City Bank of New York
Navy Yard
New York Central Lines
New York Edison Company
New York Life Insurance
New York Stock Exchange
New York Telephone Company
New York Times
News Syndicate Co., Inc.
*Paramount Pictures Distributing Corp.
*Paramount Productions, Inc.
*Southern Pacific Steamship Lines
Squibb, E. R., & Sons
Standard Oil Company (Incorporated in New Jersey)
Standard Oil Company of New Jersey
Stern Brothers
Stewart's Cafeterias, Inc.
*United Dressed Beef Company
United Fruit Company
*Wanamaker, John
*Washburn Wire Co., Inc.
Western Electric Company, 195 Broadway, 395 Hudson St.
Wilson & Co., Inc.
NIAGARA FALLS
Carborundum Company
Defiance Paper Co.
du Pont, E. I., de Nemours & Company, The R. & H. Chemicals Department
National Carbon Company, Inc.
Niagara Falls Power Company and Subsidiaries
Shredded Wheat Company
Union Carbide Company
NORTH TARRYTOWN
Chevrolet Motor Company
Fisher Body Tarrytown Division, General Motors Corporation
OZONE PARK, L. I.
*Kops Brothers, Inc.
RENSSELAER
General Aniline Works, Inc.
ROCHESTER
American Laundry Machine Company
Bausch & Lomb Optical Co.
Delco Appliance Corporation
Eastman Kodak Company
*General Railway Signal Company
Ritter Dental Manufacturing Co., Inc.
Stromberg-Carlson Telephone Manufacturing Company
Taylor Instrument Companies
ROME
General Cable Corporation
Revere Copper & Brass Incorporated
SCHENECTADY
American Locomotive Company
General Electric Company
SOLVAY
Solvay Process Company
SYRACUSE
Brown-Lipe-Chapin Company, Division General Motors Corporation
Crouse-Hinds Company
Halcomb Steel Company
United States Hoffman Machinery Corporation
TROY
Cluett, Peabody & Co., Inc.
UTICA
*Skenandoa Rayon Corporation
YONKERS
Otis Elevator Company

NORTH CAROLINA 1

WILMINGTON
Atlantic Coast Line Railroad

OHIO 52

AKRON
Firestone Tire & Rubber Company
Goodrich, B. F., Company
Goodyear Tire & Rubber Company
CINCINNATI
Cincinnati & Suburban Bell Telephone Company
Cincinnati Milling Machine and Cincinnati Grinders, Inc.
Container Corporation of America
CLEVELAND
Aluminum Company of America
Cleveland Electric Illuminating Co.
Cleveland Railway Company
Corrigan, McKinney Steel Co.
Fisher Body Cleveland Division, General Motors Corporation
General Electric Company, Incandescent Lamp Department
Glidden Company
Halle Bros. Co.
National Acme Company
National Carbon Company, Inc.
National Malleable & Steel Castings Company
Otis Steel Company
Perfection Stove Company
Republic Steel Corporation
Standard Oil Company (Ohio)
Standard Tool Co.
White Motor Company
White Sewing Machine Corporation
Willard Storage Battery Co.
COLUMBUS
Buckeye Steel Castings Co.
Federal Glass Co.
Jeffrey Manufacturing Co.
DAYTON
Delco Products Corporation
Frigidaire Division, General Motors Corporation
National Cash Register Company
HAMILTON
Champion Coated Paper Company
Ford Motor Company
IVORYDALE
Procter & Gamble Mfg. Company
MIDDLETOWN
American Rolling Mill Co.
NILES
Niles Rolling Mill Company
NORWOOD
United States Playing Card Company
PORTSMOUTH
*Wheeling Steel Corporation
ROSSFORD
Libbey-Owens-Ford Glass Company
TOLEDO
Chevrolet Motor Ohio Company
Community Traction Company
Interlake Iron Corporation
Spicer Manufacturing Corporation
Toledo Edison Company
WARREN
Youngstown Pressed Steel Company
YOUNGSTOWN
Carnegie-Illinois Steel Corporation
General Fireproofing Co.
Republic Rubber Company
Republic Steel Corporation
*Sharon Steel Corporation
Truscon Steel Company
Youngstown Sheet & Tube Company

OKLAHOMA 8

BARTLESVILLE
Phillips Petroleum Company
OKLAHOMA CITY
Armour and Company
Wilson & Co., Inc., of Oklahoma
PONCA CITY
Continental Oil Company
TULSA
Carter Oil Company
Mid-Continent Petroleum Corporation
*Sinclair Prairie Oil Company
Tulsa City Lines, Inc.

OREGON 5

PORTLAND
Montgomery Ward & Co.
Portland Electric Power Company
*Portland Gas & Coke Company
Portland General Electric Company
Portland Traction Company

PENNSYLVANIA 115

ALIQUIPPA
Jones & Laughlin Steel Corporation

ALLENPORT
Pittsburgh Steel Company

ALLENTOWN
Lehigh Portland Cement Company,
Ormrod Plant
Fogelsville Plant

AMBRIDGE
American Bridge Company
Byers, A. M., Company
*National Electric Products Corporation

BEAVER FALLS
*Babcock & Willcox Tube Co.

BETHLEHEM
Bethlehem Steel Company

BLOOMSBURG
*Magee Carpet Co.

BRACKENRIDGE
Allegheny Steel Company

BURNHAM
Standard Steel Works Company

BUTLER
American Rolling Mill Co.

CHESTER
Aberfoyle Manufacturing Company
Ford Motor Company
Scott Paper Company
*Sun Shipbuilding & Dry Dock Company

CLAIRTON
Carnegie-Illinois Steel Corporation

COATESVILLE
Bethlehem Steel Company
Lukens Steel Company

CREIGHTON
Pittsburgh Plate Glass Company

DUQUESNE
Carnegie-Illinois Steel Corporation

EAST LIBERTY
National Biscuit Company

EASTON
*Individual Drinking Cup Co., Inc.

EAST PITTSBURGH
Westinghouse Electric & Manufacturing Company

EDDYSTONE
*Baldwin Locomotive Works
*Baldwin-Southwark Corporation
*General Steel Castings Corporation

ELLWOOD CITY
*National Tube Company

ERIE
*Erie Malleable Iron Co.
General Electric Company
Hammermill Paper Company
Standard Stoker Company, Inc.

ETNA
Spang, Chalfant & Co., Inc.

FARRELL
Carnegie-Illinois Steel Corporation

FORD CITY
*Pittsburgh Plate Glass Company

HERSHEY
*Hershey Chocolate Corporation

JOHNSTOWN
Bethlehem Steel Company
Industrial Collieries Corporation

KINGSTON
*General Cigar Co., Inc.

LANCASTER
Armstrong Cork Company

LEBANON
Bethlehem Steel Company

LEETSDALE
Bethlehem Steel Company

LESTER
Westinghouse Electric & Manufacturing Company

MARCUS HOOK
*Sinclair Refining Company
Sun Oil Company
Viscose Company

McKEESPORT
McKeesport Tin Plate Company
National Tube Company

MEADVILLE
Hookless Fastener Company
Viscose Company

MIDLAND
Pittsburgh Crucible Steel Company

MONESSEN
Pittsburgh Steel Company

MUSE
National Mining Company

NEW KENSINGTON
Aluminum Company of America

PALMERTON
New Jersey Zinc Co. (Pa.)

PENCOYD
American Bridge Company

PHILADELPHIA
Abbotts Dairies, Inc.
Atlantic Refining Company
Atwater Kent Manufacturing Company
Bayuk Cigars, Inc.
Bell Telephone Company of Pennsylvania
Brill, The J. G., Company
Budd, Edward G., Manufacturing Co.
Collins & Aikman Corporation
Curtis Publishing Company
Disston, Henry & Sons, Inc.
du Pont, E. I., de Nemours & Company, Grasselli Chemical Dept.
*Evening Bulletin, The
*Franklin Sugar Refining Company
General Electric Company
Gimbel Brothers
Horn & Hardart Baking Co.
Link-Belt Company
National Biscuit Company
Navy Yard
Pennsylvania Railroad
Philadelphia Gas Works Company
Philadelphia Rapid Transit Company
Reading Company
Sears, Roebuck & Co.
Sharp & Dohme
Stetson, John B., Company
Surpass Leather Co.
United Gas Improvement Company
Wanamaker, John, Philadelphia
*Western Electric Company
Whitman, Stephen F., & Son, Inc.,

PITTSBURGH
Bell Telephone Company of Pennsylvania
Byers, A. M., Company
Carnegie-Illinois Steel Corporation,
Edgar Thompson Works
Homestead Works
Heinz, H. J., Company
Jones & Laughlin Steel Corporation
Philadelphia Company
Pittsburgh Coal Co., Montour Mine No. 10
*Pittsburgh Screw & Bolt Corporation

RANKIN
Bethlehem Steel Company
Carnegie-Illinois Steel Corporation

READING
Reading Iron Company
Textile Industries of Wyomissing

SAYRE
Lehigh Valley Railroad

SCRANTON
Glen Alden Coal Company
Hudson Coal Company
Pittston Company

SHARON
*National Malleable and Steel Castings Company
Sharon Steel Corporation
*Westinghouse Electric & Manufacturing Company

STEELTON
Bethlehem Steel Company

SWISSVALE
Union Switch & Signal Company

VANDERGRIFT
*American Sheet & Tin Plate Company

WILKES-BARRE
Lehigh Valley Coal Company

WILLIAMSPORT
Lycoming Manufacturing Company

WILMERDING
Westinghouse Air Brake Company

YORK
York Ice Machinery Corporation

RHODE ISLAND 10

PAWTUCKET
Coats, J. & P., (R.I.) Inc.
Lorraine Manufacturing Company

PROVIDENCE
*Brown & Sharpe Mfg. Company
Builders Iron Foundry
Davol Rubber Company
Gorham Manufacturing Company
National India Rubber Company
U. S. Finishing Company
Wanskuck Mills

SAYLESVILLE
Sayles Finishing Plants, Inc.

SOUTH DAKOTA 1

LEAD
*Homestake Mining Company

TENNESSEE 4

KINGSPORT
Tennessee Eastman Corporation

MEMPHIS
*Ford Motor Company
*Sears, Roebuck and Co.

OLD HICKORY
du Pont, E. I., de Nemours & Company

TEXAS 9

BAYTOWN
Humble Oil & Refining Company

DALLAS
*Ford Motor Company

FORT WORTH
Armour and Company
Swift & Company

HOUSTON
Houston Lighting & Power Company
Humble Oil & Refining Company
Sinclair Refining Company
Texas & New Orleans Railroad

PORT ARTHUR
Gulf Oil Corporation

UTAH 4

PROVO
Columbia Steel Company

SALT LAKE CITY
American Smelting & Refining Co.
U. S. Smelting, Refining and Mining Co.
Utah Copper Company

VERMONT 4

RUTLAND
Rutland Railroad.

ST. JOHNSBURY
Fairbanks, Morse & Co.
Fairbanks Scale Division

WINOOSKI
American Woolen Company, Champlain Mills

VIRGINIA 11

DANVILLE
Riverside & Dan River Cotton Mills

NEWPORT NEWS
Newport News Shipbuilding & Dry Dock Company

NORFOLK
Ford Motor Company

PORTSMOUTH
Norfolk Navy Yard

RICHMOND
American Suppliers, Inc.
American Tobacco Company,
Richmond Branch
Virginia Branch
du Pont, E. I., de Nemours & Company
*Virginia Electric & Power Company

ROANOKE
Norfolk & Western Railway
*Viscose Corporation of Virginia

WASHINGTON 3

BREMERTON
Puget Sound Navy Yard
SEATTLE
Frederick & Nelson
TACOMA
*American Smelting & Refining Co.

WEST VIRGINIA 9

BELLE
du Pont, E. I., de Nemours & Company
CHARLESTON
Libbey-Owens-Ford Glass Company
CLARKSBURG
Weirton Steel Company
GARY
United States Coal & Coke Company
HUNTINGTON
International Nickel Company, Inc.
MARTINSBURG
*Interwoven Mills, Inc.
PARKERSBURG
Viscose Company
SOUTH CHARLESTON
Carbide & Carbon Chemicals Corporation
WEIRTON
Weirton Steel Company

WISCONSIN 10

BELOIT
Fairbanks, Morse & Co.
CUDAHY
Cudahy Brothers Company
KOHLER
Kohler Co.
MILWAUKEE
*Bucyrus-Erie Company
Cutler-Hammer Inc.
Globe Union Mfg. Company
International Harvester Company
*Plankinton Packing Co.
Smith, A. O., Corporation
RACINE
Case, J. I., Company

WYOMING 1

CASPER
Standard Oil Company (Indiana)

CANADA

ALBERTA 3

CALGARY
Hudson Bay Company, Ltd.
EDMONTON
Hudson Bay Company, Ltd.
*Swift Canadian Co., Ltd.

MANITOBA 3

ST. BONIFACE
Canada Packers, Ltd.
WINNIPEG
Hudson Bay Company, Ltd.
Swift Canadian Co., Ltd.

ONTARIO 10

HAMILTON
*Procter & Gamble Company of Canada, Ltd.
Steel Company of Canada, Limited
NEW TORONTO
Anaconda American Brass, Limited
NIAGARA FALLS
North American Cyanamid Limited
OSHAWA
General Motors of Canada, Limited
TORONTO
Swift Canadian Co., Ltd.
WINDSOR
*Chrysler Corporation of Canada, Limited
*Dominion Forge & Stamping Company
Ford Motor Company of Canada, Limited
General Motors of Canada, Limited

QUEBEC 1

MONTREAL
Steel Company of Canada, Limited

The ACS Medical Department Forms

Name_____ ANNUAL / SPECIAL } **RE-EXAMINATION RECORD** Date_____

MEDICAL HISTORY SINCE LAST EXAMINATION	Date of last examination_____ Time lost since last examination because of illness_____days
GENERAL APPEARANCE	Weight Temp.
SKIN	
EYES	(Conjunctivae: Pupils: Reaction:) Vision:-without glasses R 20/ L 20/ with R 20/ L 20/
EARS	Hearing: R. L. Discharge Drums
NOSE AND THROAT	
TEETH	
NECK	Glands Thyroid
CHEST	Inspiration____inches: Expiration____inches. Report X-ray Findings and Technic: Ma. Kv. Dist. Time Stereo. Flat Standing Prone Lungs:
HEART	Pulse at rest Character S. " 2 min. after exercise Apex: Interspace Distance from Mid Ster. L. Blood Pressure: D. General Cardiac Condition and Murmurs
ABDOMEN	Circumference_____inches. (Note scars, tenderness, tension or tumors and liver edge)
EXTREMITIES	(Note any deformities, limitations of motion) Patella reflex Romberg Test
SPINE	Anus
INGUINAL REGION	Glands, condition of Rings Hernia (size & type)
URINE	Color Reaction Sp. Grav. Albumin Sugar Microscopic
BLOOD	Other Lab. Tests

REMARKS:

Examiner_____M. D.

Form ACS 1105
Re-examination Record, on heavy ledger paper
(8½ x 11, printed the same on two sides)
(Filed with first examination forms)

PHYSICAL EXAMINATION RECORD

Classification: A B C D

Name Address Check No.

Examination No.	1.	2.	3.	4.	5.	6.
Date						
Department						
Age						
Height — Weight						
Eyes						
Vision: Right						
Left						
Glasses: Right						
Left						
Hearing						
Teeth — Throat						
Heart						
Blood Pressure						
Lungs						
Abdomen						
Hernia						
Genitalia						
Spine						
Anus						
Extremities						
Urine						
Examined by						
Classification	A B C D	A B C D	A B C D	A B C D	A B C D	A B C D

Employee's Signature

Form ACS 1100
Providing for Six Examinations
(5 x 8 card, printed two sides)
(Front: above — Reverse: below)

Remarks: 1.

Signed by

Remarks: 2.

Signed by

Remarks: 3.

Signed by

Remarks: 4.

Signed by

Remarks: 5.

Signed by

Remarks: 6.

PHYSICAL EXAMINATION RECORD

Classification: A B C D

Name Address Date

Check No. Dept. Age Height Weight

Vision Right With Glasses Pupils Color Sense

Vision Left With Glasses Hearing: Right Left

Nose Teeth Throat Neck

Heart Pulse Rate Temp. B. P.

Lungs

Abdomen

Hernia

Genitalia

Spine

Anus

Upper Extremities

Lower Extremities

Scars — Deformities — Varicosities

General Appearance

Urinalysis — Albumin Sugar

ENTER ADDITIONAL INFORMATION ON REVERSE SIDE Examined by M. D

Form ACS 1101
For One Examination, with spaces for Past History, Injuries, Occupational History, Diseases and Injuries Compensated, etc.
(5 x 8 card, printed two sides)
(Front: above — Reverse: below)

PAST HISTORY: Has the applicant been subject to any of the following?

Tuberculosis
Asthma
Arthritis
Otitis Media
Epilepsy
Venereal Dis.
Flat Feet
Hernia
Operations

INJURY, Head Back Extrem. Old Fractures
Describe and give % disability, if any

OCCUPATIONAL HISTORY:

List Occupational Diseases and Injuries Compensated

I certify that my above answers are true, correctly recorded and that I am in good health (Signature Applicant)

Witness

Additional Information or Remarks

A.C.S. FORMS

THE forms developed by the AMERICAN COLLEGE OF SURGEONS for physical examinations and the records thereof in industry are as follows:

1100 ACS is a simple form providing for six examinations, with spaces on the back for any necessary additional information.

1101 ACS is a one-examination card, carrying the usual physical examination details and, in ad-

PHYSICAL EXAMINATION RECORD Classification: A B C D

Name Address Check No.

Dept. Age Nationality S. M. W. D. No. of Children Date

PAST HISTORY: Has the applicant been subject to any of the following?

Tuberculosis
Asthma
Arthritis
Otitis Media
Epilepsy
Venereal Dis.
Flat Feet
Hernia
Operations

INJURY, Head Back Extrem. Old Fractures
Describe and give % disability, if any

OCCUPATIONAL HISTORY:

List Occupational Diseases and Injuries Compensated

I certify that my above answers are true, correctly recorded, and that I am in good health

(Signature of Applicant)

Witness

PHYSICAL EXAMINATION

General Condition and Nutrition { Good / Fair / Poor } Height feet inches. Weight, present usual

Chest measure, full inspiration inches; full expiration inches. Waist measurement inches

		Near		Far		
Vision	Without Glasses	WD/ R /	WD/ L /	20/ R /	20/ L /	Smallpox
	With Glasses	WD/ R /	WD/ L /	20/ R /	20/ L /	

Smallpox: Has had smallpox; Old vaccination scar (5 yrs. or more); Recent vaccination scar (under 5 yrs.); No vaccination scar; Vaccinated by examiner

Hearing: R { Normal / Impaired } L { Normal / Impaired }

Typhoid, Year of last vaccination

Ears Nose Throat and tonsils Teeth

Pulse Rate Temp. B. P.: Systolic Diastolic

Heart

Lungs

Abdomen Hernia

Spine Hemorrhoids

Upper Extremities

Lower Extremities

Skin Glands Venereal Disease

Reflexes: Pupillary Patellar Romberg test Urine: Albumin Sugar

Other Findings and Remarks

Note defects, varicosities, scars, etc.
If classified C or D give reasons under Remarks

Examined by M. D.

Form ACS 1102
Heavy ledger paper folder: Detailed Examination History, with Medical Record of Illnesses and Injuries
(To fit 5 x 8 file)
(Front: above — Reverse: below)

MEDICAL RECORD

ILLNESS			DISABLED		INJURY				DISABLED	
Date	Diagnosis and Findings	Disposition	From	To	Date	Diagnosis and Treatment	By Whom	Disposition	From	To

PHYSICAL EXAMINATION RECORD

Classification: A B C D

Name_____ Age_____ Sex: M. F. Nationality_____ Date_____

Address_____ Family Phys._____ S. M. W. D. Dept._____

FAMILY HISTORY

Tuberculosis, Nervous and Mental, Cardio-Vasc. Renal, Cancer, etc. No. of Children Under 18_____

OCCUPATIONAL HISTORY

Injuries or Diseases Compensated

PAST HISTORY

Scarlet, Diptheria, Tonsilitis, Rheumatism, Epilepsy, Influenza, Typhoid, Pleurisy, Operations, Injuries, Hernia, Appendicitis, Chronic Cough, Hemoptysis, Night Sweats, Loss of Weight, Hospital Treatment.

PRESENT HISTORY

Present Health | Appetite | Bowels | Digestion

Vaccinated (S. P., Typhoid) | Vertigo | Fainting | Menstrual

This is to certify that the above statements are true and correctly recorded Sig.:_____

PHYSICAL EXAMINATION

GENERAL APPEARANCE:— Weight Height Temp.

SKIN:—

EYES:—(Conjunctivae: Pupils, Reaction.) Color Test:— Vision:— without glasses R 20/ L 20/ with glasses R 20/ L 20/ Near Vision

EARS:—Hearing: R L. Discharge Drums

NOSE & THROAT:—

TEETH:—

NECK:—Glands Thyroid

Form ACS 1104
Complete Physical Examination, Past History, Occupational History, etc.
(8½ x 11, printed two sides)
(Filed by employee name, alphabetically)
(Front: above — Reverse: below)

CHEST: Insp._____Inches Exp._____inches Report X-ray Findings and Technic: Ma. Kv. Dist. Time Stereo. Flat Standing Prone

Lungs:

HEART: Pulse at rest Character

* 2 min. after exercise Apex: Interspace distance from Mid. Ster. L. Blood Pressure: S. D.

General Cardiac Condition and Murmurs

ABDOMEN:—Circumference (Note any scars, tenderness, tension or tumors and liver edge)

INGUINAL REGION:—Glands, condition of Rings Genitalia

Hernia (size & type)

SPINE:—

HEMORRHOIDS:—

EXTREMITIES:—(Note any deformities, limitations of motion) Patella reflex Romberg

URINE—Color Reaction Sp. Grav. Albumin Sugar Microscopic

BLOOD:— Other Lab. Tests

REMARKS:—

Classification: A B C D Examined by_____ M. D.

PHYSICAL EXAMINATION RECORD

Classification: A B C D

Name | Address | Check No. | Date

Age | Sex: M. F. | Nationality | M. S. W. D. | Children { Over 18 / Under 18 } | Dept.

FAMILY HISTORY { Tuberculosis, Mental / Cardio-Renal, Cancer }

OCCUPATIONAL HISTORY

PERSONAL HISTORY

	Scarlet Fever Diphtheria	Pneumonia Tuberculosis	Epilepsy Nervous Breakdown	Typhoid Venereal Dis.
	Tonsilitis Rheumatism	Heart Disease Gastro-Intes.	Headaches Backaches	Rupture Diabetes
Colds and Coughs		Pleurisy	Night Sweats	Loss of Weight
Other Diseases		Operations		
Appetite	Digestion	Constipation	Menses	Sleep
Date of Last Vaccination { Small Pox / Typhoid }		Accidents		

I certify my answers to be true (Signature) | Personal Physician

PHYSICAL EXAMINATION: Height ft. in. Weight | Usual Weight | Temp.

General Appearance: Good Fair Poor | Development: Robust Average Poor | Skin

Vision: With Glasses 20/ R / 20/ L / | Without Glasses 20/ R / 20/ L / | Near Vision | Color Vision | Reaction of Pupils

Hearing: R. L. | Ext. Ear | Nose | Teeth | Throat | Neck { Thyroid / Other Glands }

Chest: Inspiration | Expiration | Lungs

X-Ray

Heart: Pulse Rate { At Rest / 2 min. after exercise } | Murmurs | Size | Blood Pressure

Abdomen: Circumference | Scars, Liver Edge
Tumor, Masses, etc.

Hernia | Inguinal Rings | Genitalia

Spine | Hemorrhoids

Extremities: Deformities | Limitations of Motion

Varicosities | Reflexes { Patellar / Romberg Test }

Urine: Sp. Gr. Alb. Sugar | Microscopic

Blood | Other Lab. Examinations

Mental Reaction: Quick Average Slow | Morale

Other Findings and Remarks

If Class C or D give reason under remarks. Examined by_____ M. D.

RE-EXAMINATIONS AND ADDITIONAL INFORMATION MAY BE RECORDED ON REVERSE SIDE

Form ACS 1106
For Less Detailed Examinations
(Filed by employee name, alphabetically)
(8½ x 11, printed one side)

dition, having spaces for past history, occupational history, diseases, injuries previously compensated, and other pertinent data.

1102 ACS is in folder form, carrying detailed examination and history, with Medical Record of illnesses and injuries.

1103 ACS is not reproduced here, as it is identical with 1102 on the front, with the reverse arranged for re-examinations and additional information.

1104 ACS is arranged for very complete physical examination data, past history, occupational history, etc.

1105 ACS is a re-examination record. It may be used in conjunction with 1104 and 1106.

1106 ACS is intended for less detailed examination. The reverse is blank.

For convenience in the use of space, Form 1105 ACS is placed ahead of the others here, and, as noted, Form 1103 ACS, being identical with Form 1102 ACS is not reproduced.

Occupational Diseases

—*and the Industrial Nurse*—

A. L. Brooks, M.D.,
Medical Director, Fisher Body Division,
General Motors Corporation, Detroit

IN DETERMINING what the industrial nurse should know about occupational diseases it is important that we have a clear understanding of what we consider occupational diseases to be.* For convenience we may accept a definition of the term used by several states in setting up legislation for compensation for disability arising from such disease. The term is defined as "a disease which is due to causes and conditions which are characteristic of and peculiar to a particular trade, occupation, process, or employment." With this definition as a starting point, we are able to separate diseases of employees into two groups, occupational diseases and non-occupational diseases, and further, to classify occupational diseases as specific and general.

The fact that some diseases are due to causes and conditions characteristic of certain trades was known to physicians 2000 years ago. The effect of certain poisonous metals, and of dust from stone cutting had been noted and ascribed to occupation long before much was known of physiology or the logical use of drugs. There was a vast amount of ignorance and superstition associated with early findings, but as time went on this gave way as an effort was made to associate cause and effect.

There are certain diseases now about which there is little doubt in the majority of cases. These are the ones we hear most about. They are specifically mentioned in the schedules of compensation acts. They occur following definite, known exposure, they present clear-cut signs, and as a rule they respond to treatment. They are such diseases as lead and mercury poisoning, infections such as anthrax and glanders, and the pneumonoconioses.

These diseases may be termed *specific*, and there can now be little doubt of the obligation upon the employer to prevent them, or having failed in this, to cure the condition and to compensate for disability arising therefrom, provided it be possible definitely to assign the responsibility to the right employer.

Then there are other diseases which may be termed *general* because they are not limited to people engaged in certain trades or occupations. They may be encountered among the general population. Examples are pneumonia, arthritis and tuberculosis. These may be claimed to be the result of working conditions, exposures and other industrial causes, but it is extremely difficult to state that they would not have occurred had the worker not been employed.

The question of what types of disability to compensate for has long been a matter of dispute. In this country, each state has its own legislation on the subject. In some there is general coverage for all conditions which produce disability and arise out of employment, or which conform in general to our definition of occupational diseases. In others there is a definite list or schedule which mentions specifically each disease or injury. At present this seems to be the preferred plan.

As an example of such a schedule, we may name a list of occupational diseases which has been included in legislative acts in Michigan, Ohio, Minnesota, New Jersey, North Carolina, and to a greater or lesser extent in other states.

Occupational diseases in general fall into the category of diseases due to microbic infection; poisoning by the heavy metals and other inorganic substances, by organic compounds like alcohol, petroleum products, and coal tar products; the effects of change in air pressure, and of various noxious gases in the atmosphere; and to some extent such mechanical effects as hernia not caused by accident, synovitis, friction blisters, and exposures to extremes of temperature.

The infectious diseases usually referred to are anthrax from contact with hides, glanders from horses, and tuberculosis from the usual sources.

Poisoning may be systemic or local. It may produce such diseases as toxemia from lead, arsenic, or mercury, which are systemic; or there may be the effects of petroleum, which usually result in skin involvement only. Chrome sores of the skin are characteristic effects of chromic-acid exposure, and the nasal perforations of chrome poisoning are easy for the nurse to recognize in most cases.

Various bases and fumes such as nitrous fumes, carbon monoxide, and hydrogen sulfide may cause illness or death, but here it is difficult for the industrial nurse to afford much assistance, except to learn as much as possible about the exposure in order that she may aid the doctor in arriving at an early diagnosis.

In all cases in connection with a workman's right to compensation, it should be remembered that it is never the purpose of legislation to compensate for the *disease*, but for the disability arising therefrom.

Statistics apparently prove that the life of industrial employees is shorter than that of the general population. But thus far it has been impossible to state how much this has been contributed to by living in large industrial centers, by improper housing, improper food, bad habits, and the choice of certain trades by people who are mentally or physically not adapted to such occupations. Certainly some of the latter factors can hardly be charged to industry's neglect.

Nevertheless, whether specific or non-specific, compensable or non-compensable, these diseases are the interest of the industrial nurse. It is her business to look impartially upon these conditions, to discover significant signs, to give aid and comfort in minor cases, and to bring to the attention of the plant physician anything she sees which requires more help than she can offer.

Then there are many diseases which definitely

---

* Presented before the Industrial Nursing Section, National Safety Congress, Kansas City, Missouri, October 13, 1937. Published in the Transactions of the 26th National Safety Congress, Chicago, 1937, and in *Public Health Nursing*, March, 1938.

have no relation to employment. We may mention such communicable diseases as the acute exanthemata, syphilis, various congenital conditions, and degenerative diseases of old age. Here again, we may find that some of the above-mentioned, nonspecific occupational conditions are intimately connected with employment environment. But the degree of responsibility, if any, will have to be determined by someone other than the nurse.

THE industrial nurse will be an important aid in the management of occupational diseases if she has the industrial point of view. She should know what diseases might reasonably be expected to occur in her plant. It is true here as elsewhere that we find what we look for. The man with a sallow complexion, complaint of chronic constipation, weakness or soreness in the forearms, and occasional abdominal cramps will suggest plumbism to the nurse who knows that lead is used in his department. This means that she should be as familiar as possible with processes in manufacture. Conversation with men and well directed questions concerning the work are welcomed by the men, as they indicate an interest on the part of the nurse. The nurse is alert, indeed, who will notice characteristic signs of disease which might have originated elsewhere, but which would hardly be expected in the present occupation.

Thus far the nurse has been discussed largely as a case finder. She is valuable in this role because she will see a greater number of cases than the physician. Having listened to complaints, or having had her suspicions aroused, it becomes her duty to transmit the facts to the plant physician, who will make the necessary investigation. This may require a special effort and may occasion some expense in cases where there is not a full-time plant physician, but it is time and money well spent.

A VERY improtant part of the nurse's work is the keeping of adequate records. This applies particularly in situations where there is a possibility of lost time and compensation. The nurse should have the whole story from the time the employee first presents himself until his case has been cleared, including the doctor's finding and treatment so that the record may be used at any time in the future for the benefit of both employee and employer.

The industrial nurse will handle occupational diseases more successfully if she is acquainted with the management and the foreman. She will recognize supervisors as a source of reliable information, and will be able to utilize information from them in building up material for a diagnosis. Her interest and sympathy for the men will also encourage foremen to make greater efforts to protect their men.

The duties of the industrial nurse having been outlined in general, let us consider a hypothetical case which will illustrate how the nurse who has a knowledge of the essentials of occupational diseases may function.

"John Brown, handy man about the drafting rooms, comes into the dispensary one day complaining of a fine itching rash on both arms. The nurse notes the condition, and inquires about the work. He states he has worked here two years and has been doing the same kind of work. He has been out in the country week-ends, but does not think he has been exposed to poison ivy—although he admits he does not know what it looks like. The doctor is out at present but will be back in the afternoon. The nurse knows the superintendent of the drafting room. She calls him and upon inquiry finds that a part of John's work is to carry blue prints to the mailing room. A new process has been developed in blue printing within the last week. The man is given routine preliminary treatment.

"This information is submitted to the doctor upon his arrival, and when next day the condition seems much worse, the diagnosis is fairly well clinched. The doctor makes a patch test and changes the man's job. The condition clears up, and the nurse deserves credit for helping to steer the case into the proper channels. Had she not known something of the nature of contact dermatitis or the nature of the work, and had she not contacted the proper authorities in the drafting room, the case might have become serious before the doctor saw it, and it might have run into disability and compensation."

The importance of occupational diseases is not likely to be overlooked now that so much is appearing in the press on the subject. There are approximately 50,000,000 people gainfully employed in the United States at the present time. Of these, about 15,000,000 are engaged in industry. A statement is made in a recent U. S. Public Health Service report that it is estimated we are spending five billion dollars annually for compensation and other costs due to injuries and occupational diseases. To be sure, only a small percentage of this outlay goes for occupational diseases, while accidents claim a much higher figure. But the trend is toward a reversal of this. Accidents have been controlled to a great extent so that their cost is decreasing; while occupational diseases, though probably not increasing, are certainly receiving a great deal more attention than heretofore.

One hesitates to state how many states now provide compensation for industrial-disease disability at a time when new legislation is being enacted so rapidly, but most of the important industrial states now compensate for some or all of the conditions which can be attributed to occupational diseases. Some have blanket coverage for all such conditions, while others name specific diseases or specific occupations. There have been injustices to both employee and employer, but with time and an increased study of conditions, we will eventually arrive at fairer, more equable adjustments.

The industrial nurse finds herself today in this arena of changing policies and evolutionary social adjustment. It is her privilege to be one of the

connecting links between employee and employer. If she commands the respect and trust of the men and realizes her responsibility to them, she will likewise be most valuable to her employer.

Industrial Medical Meetings

THE program for the Twenty-Third Annual Meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, to be held, in conjunction with the MIDWEST CONFERENCE ON OCCUPATIONAL DISEASES, at the Palmer House, in Chicago, on June 6, 7, 8, and 9, 1938, has assumed a degree of definiteness, as follows:

MONDAY, JUNE 6:

Under the general heading of "Industrial Hygiene," there will be these presentations, in addition to others to be announced later:

"The Physician's Responsibility in Industrial Hygiene," by CLARENCE D. SELBY, M.D., Medical Consultant, General Motors Corporation, Detroit.

"The Insurance Carrier and the Control of Occupational Diseases," by J. B. LAMENZO, Research Engineer, Hartford Accident and Indemnity Company, Hartford.

"The Estimation of Potential Occupational Disease Hazards, and of Their Control," by J. J. BLOOMFIELD, P. A. Sanitary Engineer, U. S. Public Health Service, Washington, D. C.

"The Engineer's Place in Industrial Hygiene," by WARREN A. COOK, Superintendent, Engineering Department, Zurich General Accident Insurance Company, Chicago.

TUESDAY, JUNE 7:

"Contact Dermatitis," by MICHAEL EBERT, M.D., Associate Professor of Dermatology, Rush Medical College, Chicago.

"Analysis of the First 200 Cases Under the Illinois Occupational Diseases Law," by CLARK D. BRIDGES, Safety Director, Casualty Mutual Insurance Company, Chicago.

"Noise in Industry," by WALLACE WATERFALL, Fellow, Acoustical Society of America.

"Development in Occupational Disease Legislation," by OLIVER G. BROWNE, General Claims Attorney, New York Central System.

"Women in Industry," by M. H. KRONENBERG, M.D., Director of Industrial Hygiene, State of Illinois Department of Public Health.

"Effect of Light in Industry," by DR. M. LUCKIESH, Director, Lighting Research Laboratories, General Electric Company, Nela Park, Cleveland.

"Tuberculosis in Industry," by O. A. SANDER, M.D.

"Employability of the Silicotic," by VOYTA WRABETZ, Chairman, Industrial Commission of Wisconsin.

WEDNESDAY, JUNE 8:

The subjects on this day will include:

"Problems of Industrial Medicine and Surgery;"

"Medical Departments and Compensation;"

"Syphilis in Industry;" and

"Night Blindness in Truck Drivers."

THURSDAY, JUNE 9:

The Thursday morning program, in collaboration with the Institute of Traumatic Surgery, will be given over in large part to treatment.

Among the presentations will be a paper by CARLO S. SCUDERI, M.D., of Chicago, on "Fat Embolism," and a study by JAMES E. M. THOMSON, M.D., of Lincoln, Nebraska, on "Pectin in Traumatic Wounds."

Thusday afternoon will be devoted to a Fracture Symposium, in conjunction with the Regional Fracture Committee of the AMERICAN COLLEGE OF SURGEONS.

The collaborating organizations now include:

State of Illinois, Division of Industrial Hygiene;

Department of Public Health and Hygiene, University of Illinois College of Medicine:

Chicago Society of Industrial Medicine and Surgery;

Institute of Traumatic Surgery;

Board of Health, City of Chicago;

Occupational Disease Research Department, Northwestern University Medical School;

Industrial Hygiene Unit, Wisconsin State Board of Health;

National Safety Council;

Greater Chicago Safety Council;

Chicago Dermatological Society;

Bureau of Industrial Hygiene, Detroit Department of Health;

Department of Health, State of Michigan.

Proposed Amendments

AS TO the American Association of Industrial Physicians and Surgeons, it is proposed to amend the Constitution and By-Laws as follows:

Article III. Sec. 1: MEMBERSHIP:

Membership in this Association shall be of four classes:

(a) Active: Only physicians who are actively engaged in the practice of Industrial Medicine and Surgery or who are engaged in the investigation of industrial medical problems shall be eligible to active membership.

(b) Associate: Other physicians and individuals who are not physicians but whose work or activities bring them within the realm or province of the industrial physician, shall be eligible to associate membership.

(c) Honorary: Any person who has contributed distinguished service to the objects for which the Association stands shall be eligible to honorary membership.

(d) Fellowship: Active members of the Association and of its component societies, after two years of membership in the Association or their respective societies, may apply for Fellowship. Fellowship will be conferred by the Board of Directors upon applicants who have been actively engaged in the practice of Industrial

Medicine for at least five years and shall successfully pass an examination to determine that they are fully qualified to practice Industrial Medicine and Surgery.

A suitable certificate, attesting that they are "qualified in the Art and Science of Industrial Medicine", will be issued by the officers to those upon whom Fellowship has been conferred.

Amend the By-Laws as follows:

Article II. Sec. 1: DUES:

In line two, after 'per year', add: "except where a special arrangement is made with an organized group to come in as a body".

Article V. Committees: Add Sec. 4:

The President shall appoint an Examining Committee to pass upon the qualifications of applicants for Fellowship.

Meeting Calendar

—1938—

MAY:

TEXAS RAILWAY SURGEONS ASSOCIATION, Galveston, Texas, May 9, 1938. *Secretary,* DR. ROSS TRIGG, First National Bank Building, Fort Worth, Texas.

CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY, Nineteenth Annual Meeting, Springfield, Illinois, May 17, 1938. *Secretary-Treasurer,* DR. FRANK P. HAMMOND, 6308 Cottage Grove Avenue, Chicago.

ASSOCIATION OF SURGEONS OF THE SOUTHERN RAILWAY, Forty-First Annual Meeting, New Orleans, Louisiana, May 24, 25, and 26, 1938. *Secretary-Treasurer,* EDITH A. FOLTZ, Railway Building, Washington, D. C.

JUNE:

AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, Twenty-Third Annual Meeting, in conjunction with the MIDWEST CONFERENCE ON OCCUPATIONAL DISEASES, Palmer House, Chicago, Illinois, June 6, 7, 8, and 9, 1938. *Secretary-Treasurer,* DR. VOLNEY S. CHENEY, Armour and Company, Union Stock Yards, Chicago, Illinois.

INSTITUTE OF TRAUMATIC SURGERY, June, 1938. *Secretary-Treasurer,* DR. JOHN D. ELLIS, 122 South Michigan Avenue, Chicago.

SEPTEMBER:

AMERICAN ASSOCIATION OF RAILWAY SURGEONS, Forty-Ninth Annual Meeting, September 19, 20, 21, Palmer House, Chicago. *Secretary,* DR. D. B. MOSS, 547 West Jackson Boulevard, Chicago.

ASSOCIATION OF SURGEONS OF THE NEW YORK CENTRAL SYSTEM, Fifteenth Annual Meeting, September, 1938. *Secretary-Treasurer,* H. A. FATHAUER, 413 LaSalle Street Station, Chicago.

NOVEMBER:

SECTION ON RAILWAY SURGERY, Southern Medical Association, Oklahoma City, Oklahoma, November 15, 16, 17, and 18, 1938. *Secretary,* DR. JAMES W. DAVIS, Davis Hospital, Statesville, North Carolina.

NEW YORK STATE SOCIETY OF INDUSTRIAL MEDICINE, Eighteenth Annual Meeting, Albany, N. Y., November, 1938. *Executive Secretary,* FRANK E. REDMOND, 361 Delaware Avenue, Buffalo, N. Y.

Industrial Hygiene Course

—At University College, Nottingham—

THE following is from *Labour Management,* London:

DIVISION OF SUBJECTS INTO:

1. Specific health hazards in industry.
2. Occupational factors in general incapacity.
3. Medical aspects of industrial management.

First-aid arrangements.

General sickness problems and sick absenteeism.

Industrial welfare work and modern management technique.

The physiological effects of industrial environment.

Sources of knowledge and research organizations.

The young worker.

Permanent partial disablement and rehabilitation of injured workers.

Industrial medical and nursing services.

The medico-social aspects of modern industry.

The connection between educational, medical and economic factors.

The labour manager and his/her scope and opportunity as an agent of preventive medicine.

From the Archives

ACCORDING to DR. HARRY MOCK, the first physical examinations of which there is any record were done by DR. FRANK FULTON, of Providence, R. I., in 1906.* These examinations were made free of charge for the purpose of discovering tuberculous workmen. In 1909, DR. MOCK began examining employees of Sears, Roebuck and Company, in Chicago, and this practice was speedily followed by other pioneers in the field of industrial medicine. The first official section on industrial hygiene was inaugurated in 1914 by the American Public Health Association.

"The year 1915 was particularly significant in the history of industrial medicine. Three events of outstanding importance took place:

"1. The organization of a division of industrial hygiene and sanitation by the United States Public Health Service at Washington, D. C., under the direction of SURGEON J. W. SCHERESCHEWSKY.

"2. The creation of a section on health service in the National Safety Council, which section held its first session in conjunction with the Fourth Annual Congress at Philadelphia in October.

"3. The inauguration of the Section on Hygiene and Preventive Medicine by the American Medical Association, under the chairmanship of DR. OTTO P. GEIER."

* C. O. SAPPINGTON, M.D., DR.P.H., in *J.A.M.A.*, December 27, 1930.

Industrial Medicine

Reg. U. S. Pat. Off.

The Journal of Traumatic Surgery and Occupational Diseases

Executive and Publication Offices
413 Pleasant Street, Beloit, Wis.

Eastern Offices
110 East 42nd St., New York City

Editorial Offices
540 No. Michigan Ave., Chicago, Ill.

CONSULTANT:
C. O. SAPPINGTON, M.D., DR.P.H.

MANAGING EDITOR:
A. D. CLOUD

EDITORS:
JAMES T. CASE, M.D., F.A.C.S.
VOLNEY S. CHENEY, M.D., F.A.C.S.
BRADLEY L. COLEY, M.D., F.A.C.S.
JOSEPH JORDAN ELLER, M.D.
HART E. FISHER, M.D., F.A.C.S.
JOHN G. FROST, M.D., F.A.C.S.
OTTO P. GEIER, M.D.
WILLIS W. LASHER, M.D., F.A.C.S.
WM. D. MCNALLY, M.D.
M. N. NEWQUIST, M.D.
HORACE W. PORTER, M.D.
FREDERICK W. SLOBE, M.D., F.A.C.S.
E. A. VANDER VEER, M.D.

VOLUME 7 MARCH, 1938 NUMBER 3

Credit Where Credit Is Due!

AN EVENT which has been occurring with such regularity that it might almost be called "the happening of the month" is the "discovery" by an organization of one kind or another of the fact that industrial medicine is a great field, with a great future. We have mentioned this event repeatedly in these columns, noting that the "discovery" is usually made the occasion for publicity, with the name of the "discovering" body satisfactorily displayed, and the personnel of the inevitable committees, boards, etc., sharing the prominence.

This continued originality in new quarters is desirable, of course, and helpful—because as the interest in industrial medicine becomes broader its application is increasingly likely to extend to more and more of the employment situations in which its medical and economic values should apply. In general, the greater the interest, the wider the use and benefit.

Behind the scenes, however, the successive discoverers become aware of something not clearly perceived in the flush of first acquaintance. This is the fact that industrial medicine has not only a future, but also a past, and a present. Then comes, gradually, the realization that it is not necessary, to turn the new interest toward hastening the arrival of industrial medicine as a distinct and important field, for, as we have said so many times, it *has* arrived. It is here.

And thus there develops appreciation of the fact that industrial medicine is a factual entity —with a history of its own, a background of pioneers with long experiences and leaders with keen minds, a group of associations in intimate touch with its problems, a literature of important proportions, and a perfectly satisfactory complement of medical experts and practioners who have been in it and of it for many years.

And hard upon this realization follows the final knowledge that, from the direction of organized medicine, industrial medicine has been given—as the author of "Blue Book of Industry" remarks—a sound spine and a solid footing, the Minimum Standard of the AMERICAN COLLEGE OF SURGEONS being the one, and the number and character of the medical services in industry that have adopted the Minimum Standard being the other. For the AMERICAN CCOLLEGE OF SURGEONS made its "discovery" of the field of industrial medicine many years ago, and *its* discovery had a result which can never be duplicated by even the most earnest emulators.

ALL OF this is somewhat surprising, not only to the more recent discoverers of the field, but even to some of those who would like to have it appear that they discovered it long since. Among the special causes of surprise are: (1) the quality as well as the number of the medical services which now have the A.C.S. Approval; (2) the fact that the work of the COLLEGE had gone so far and attained such remarkable results before very much seemed to be known about it; and (3) the realization that the A.C.S. Certificate of Approval doesn't hang where it does because it is a work of art, and that the "shall" which stands written upon it is not merely an euphemism, in reverse English—such as when the inspector winks at the specifications—but that, actually and effectively, because cooperatively, it means what it says.

Examining this A.C.S. Approval by itself for a moment, there is a great deal more than a reason for surprise inherent in the cooperation which has extended it so far. The fact that the Medical Directors and the executive heads of the largest, most strongly established, most completely stabilized and most important businesses in the country have voluntarily put their medical services for their employees on the high plane of the Minimum Standard has a significance not fully appreciated on first knowledge. It needs to be thought about considerably, before it can be fully grasped. The professional status of the COLLEGE, the comprehensiveness of the Minimum Standard, the fine coordination between idealism and practicality in the COLLEGE's surveys, the complete mutuality of aims and purposes expressed in the seeking and acceptance of the Approval and all that it means—these are almost beyond the ap-

preciative ability of the part of the world that thinks of business, and particularly "big" business, as purely "commercial," and therefore interested only in profits and dividends. There's a "spirit" in it—a something intangible and yet priceless, incapable of being prisoned among the ponderables on the balance sheet, while nevertheless as valuable as any element of reputation. The Minimum Standard speaks for itself from the medical standpoint. And the list of Approvals speaks for itself from the economic standpoint. But only a combination of lyric poet and economist could describe in truest measure the idealism, "the spirit," the whole conception of both—for the economist alone would encounter enough to use up all of his capacity for praise in the practical common-sense effectiveness of the Standard.

The officers of the COLLEGE, however, and the 700 Medical Directors at present involved in this remarkable achievement, do not find it particularly a matter for surprise, or even for congratulation, that their joint cooperative work has thus put form and plan, and solid feet and spine, into industrial medicine. They have—perhaps subconsciously, but nevertheless effectively, as evidenced both by what they are doing and their manner of doing it—a deep sense of the timeliness and the inevitability of their results.

This is the same kind of feeling that grows upon the chronicler who undertakes to trace this phase of the enterprise of the COLLEGE to its origins in motives and events. Going back over the records, it is apparent from the earliest beginning that circumstances and changing scenes, and meetings of men and of minds, were making a pattern; that there was coming to pass one of those fortuities wherein brains and personalities, and ideas and ideals, while seeming to be contriving a plan, were working out a predetermined purpose, in connection with which the men who were doing it were the stewards of the capacity to do it

The conclusion from the study of such a history must always be that the thing accomplished under circumstances of that kind is a necessary part of the essential evolution upward which is the life of the mind and the spirit; that it is an indispensable element of what *ought* to be. If there is any other conclusion, it will be confounded by the facts.

AS TO the new "discoverers" of the field, the more the merrier, and welcome are they all —no matter how they come, or who they may be.

For they come in various forms—as associations, groups, and individuals. And, in all candor, it must be recognized that they come in different ways. Some are patronizing, some critical; some have constructive ideas and are anxious to be of service; some are anxious only to get "on the band wagon"—particularly in connection with the upsurge of public attention to occupational diseases. Altogether they present the whole gamut of attitudes—from sincerity to superciliousness—from altruism which is genuine to unselfishness which "protests too much"—from the challenge of chip on shoulder to the earnestness of "How can we help?"—from the cocky "Here, *we'll* show you how," to the plaintive "Me too!"

Regardless of that, however, they are welcome. One of them might develop a new idea, or a means of amplifying or extending an idea already developed. They are too late to *make* the field—it is already made. And they are not big enough to break it apart and make it over—it is too strongly grounded and too expertly put together for even a conquering invasion to accomplish more than the ultimate assimilation of itself.

OF ALL the criticisms they bring, the most interesting is probably the platitude that industrial medicine has been too much curative, too neglectful of the preventive. As a critcism, this is both true and untrue. Within the field of industrial medicine, and extending outward from the firm and solid center of the full-time Medical Service under the Minimum Standard toward the circumference of the lesser and more inadequate services which shade off through a penumbra of some to none at all, the criticism is true in proportion as the point of its application is distant from the center. At the center it is completely untrue. There the work of numerous men has made prevention as much a part of the adequate medical service as any other feature—such men for example, as DR. LEVERETT D. BRISTOL, Health Director of American Telephone & Telegraph, who, in the last 15 years has written numerous articles and a book on the subject, and now, "distinguished for his interest in, and his effective organization and establishment of, public and industrial health programs," is at the zenith of a career in industrial *preventive* medicine. There are many others, familiar to those who know the field. Indeed, there are *industrial hygienists*, finding a profession in that part of industrial medical work which is wholly *prevention*. Outside, however, and away from the central area of the strong and adequate, the lack of prevention increases as the extent and quality of the whole of the medical service decreases—until, beyond the penumbra, in the area where there is no medical service at all, there is, of course, no preventive effort.

The criticism, however, is interesting for two reasons.

The first concerns whatever truth there is in it at any point within the circle of the field. Here, in any instance where it may be thought that the criticism is specifically applicable, attention should be given to the reasons for too little prevention. Invariably it will be found that the medical effort manifested in that situation is circumscribed by limitations which are holding back its best expression. And these limitations will be in small part medical—as in connection with the relations of the medical officer to the private practictioner, and in large part executive—as where the employer will not support more than such curative services as he cannot avoid.

The second concerns the question as to why the criticism is so continually urged with reference to industrial medicine as a whole. Obviously

it does not apply to industrial medicine as a whole, because where industrial medicine is permitted by executive cooperation to be what its name implies there is no lack of preventive effort. And so, and equally obviously, it only applies where industrial medicine is struggling under limitations and handicaps which keep it at fractional effectiveness. It is not, therefore, a criticism of industrial medicine itself; it is only a criticism of the difficulties under which industrial medicine has to labor in some places. It continues to be made, however, regarding the whole field.

There must be a reason. And it is within the duties of the journal of the field to ask what that reason is, and, in the absence of any possibility of answer as to a sensible basis for the continuance of this criticism to draw the conclusions which the circumstances render inevitable. When, therefore, the criticism is made that industrial medicine—without differentation as to the part of it that is meant—is neglecting preventive measures in the matter of employee health, it is made not because it is true but because there is a purpose in making it. And that purpose can be no other than to belittle what has been and is being done, in order that what the critic proposes to do shall assume the greater importance.

THIS suggests that something remains to be done in industrial medicine. As a matter of fact, *much* remains to be done. That is common knowledge. But just what is it? Stripping the criticisms of their generalities, and getting past the husks of their purpose to the kernels of whatever merit they may have, where are the areas of the constructive work that is still to do?

Apparent without any criticisms are two things: (1) the education of executives in the companies —particularly the smaller companies—which do not have medical services for their employees, to the actual, tangible, economic advantages of such medical services; and (2) the education and training of medical men in the peculiar and particular adaptations of medical science to employment relation that are required in *industrial* medicine as distinguished from general medicine.

We shall not attempt at this time to point out who is best equipped to do these things. But we may go so far as to suggest that the first-named of the two, the education of the executives, especially of the smaller companies, can be furthered by *publicity.*

The difficulty there, however, is that the very men and organizations who have been doing the fine work that has been done in industrial medicine, and who are thus best equipped to tell about it, are just the ones who can't advertise it.

But *we* can advertise it, and that is what we propose to do. The independent appraisal of the work of the AMERICAN COLLEGE OF SURGEONS which appears in these pages under the title "Blue Book of Industry" is a beginning in that direction.

We believe it is a good beginning—even though it does fall short, in many ways, of adequate evaluation of so fine a piece of work. At any rate we talk about it, which is something the COLLEGE can't do; and we praise it, which is something the COLLEGE wouldn't do.

But, as a matter of fact, it stands beyond praise. The only result of our description of it may be to bring it to the attention of some who, while they may have heard of it, may not have given thought to its significance. Nothing we can say will add to that significance. As the author of the Appraisal says: "From every angle, in every relation, it is the most important and most significant single accomplishment in the history of industrial medicine and surgery."

We have, however, succeeded in giving the credit where the credit belongs—to the 700 Medical Directors who have the A.C.S. Approval, the thousand or more who want it and are in process of getting it, and the A.C.S. for making it available and establishing the basis on which it can be obtained. This we think is much better than to keep still while the credit gets away from where it is due to where it is claimed.

History!

THE calendar of industrial medical meetings to be held in 1938, which appeared in our last issue, should have said with reference to the ASSOCIATION OF SURGEONS OF THE SOUTHERN RAILWAY that the meeting of this organization at New Orleans, May 24, 25, and 26, this year will be its *Forty-First Annual Meeting.* The previous mention also had wrong dates. The correct ones are as above set forth.

It is worth repeating, both for emphasis on the quite remarkable facts, and to set the record straight, that the:

AMERICAN ASSOCIATION OF RAILWAY SURGEONS will hold this year its *Forty-Ninth* Annual Meeting;

ASSOCIATION OF SURGEONS OF THE SOUTHERN RAILWAY, its *Forty-First* Annual Meeting;

AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, its *Twenty-Third* Annual Meeting;

CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY, its *Nineteenth* Annual Meeting;

NEW YORK STATE SOCIETY OF INDUSTRIAL MEDICINE, its *Eighteenth* Annual Meeting;

ASSOCIATION OF SURGEONS OF THE ATLANTA AND WEST POINT RAIL ROAD, THE WESTERN RAILWAY OF ALABAMA, AND THE GEORGIA RAILROAD, its *Eighteenth* Annual Meeting; and

ASSOCIATION OF SURGEONS OF THE NEW YORK CENTRAL SYSTEM, its *Fifteenth* Annual Meeting.

This average of more than a quarter-century of solid interest in the medicine and surgery of the employment relation is a pretty strong element of what we refer to elsewhere as "background".

The sum total is "history" itself. And that history, when it is written in its wealth of fine detail, must not be made a mere record of events, but must breathe the spirit and the brains that compelled the events to happen and put into them the life and importance that made them historical.

Occupational Diseases and Industrial Surgery

The Industrial Nurse's Part in the Prevention of Sickness

PHOEBE BROWN, R.N.,*
Consolidated Water Power & Paper Company, Wisconsin Rapids, Wisconsin

EVERY NURSE in industry has many opportunities to stimulate and participate in a program for the prevention of sickness. The extent to which the nurse enters into the sickness prevention program depends upon the type of industrial medical service which is maintained.

Some industrial plants maintain a nurse primarily for their employees' benefit association, and thus her work is chiefly that of welfare. She gives service not only to the members, but to their families as well. She has an excellent opportunity to give such employees and their families a keener understanding of good health and better living. For after all, the problem of sickness prevention concerns not only the individual employee, but also his family.

To fill her place successfully in such a program the nurse must be genuinely interested in the problems of the employees. She must have a knowledge of the personnel whom she serves—their modes of living, their idiosyncrasies, their families and environments. By keeping her ear to the ground constantly she learns of their problems so that she may help to solve them.

Naturally a knowledge of the community served is vital, for often through constructive suggestion she is able to improve the health standards of the community.

Perhaps a better conception of the sickness prevention program may be gained by an actual case analysis:

The writer was called to the home of an employee who had been reported sick at frequent intervals during the past two years. He was underweight, nervous, and irritable. On the first home visit he was found to be confined to bed and vomiting excessively. His wife said that he had attacks of this type periodically; but that he would not have a physician because his doctor did nothing for him except give him an expensive prescription and tell him to be careful what he ate.

During the attack he was careful enough, and ate nothing for two or three days. But as soon as the illness was over he went back to his old diet of meat, potatoes, plenty of spices and relishes, copious amounts of coffee, two packages of cigarettes a day, and much beer each week-end.

At one time the doctor had said he should have an x-ray of the stomach, but he complained that this would cost him $40, which he couldn't afford, and anyway he couldn't get away from work when he wasn't sick. He was finally made to realize that he was losing much more time and money being ill every two or three months, losing four or five days at a time, than if he were to find out just what was wrong and then do something about it.

He was referred to a clinic which was conducted on a part-payment basis, and a complete examination was made, with x-rays and blood tests. After he was convinced of the necessity of a proper diet, his attacks became less frequent, and he gained weight and was a much more agreeable fellow at work.

In another instance an employee's wife had undergone an operation at a local hospital. When she was visited later at home, it was learned that she was recovering satisfactorily but that there were desperate financial troubles. The husband earned $92 a month. There were seven boys in the family, the oldest 18 and unemployed. It was discovered that one of the children who was graduating from school did not even have a graduation suit. His father couldn't afford it because he was paying $5 weekly on his wife's $90 hospital bill. He was taking care of the doctor's bill by doing some repairing and cleaning in his office.

After the problem was discussed with the employee, the hospital authorities were visited. Hearing the story and realizing the effort the man was making, the hospital gladly discounted $50 from the bill. Payment of the remaining $30 was made by the Employees' Welfare Loan Fund, and this in turn was deducted from the employee's pay check at the rate of $2 a week. The total cost to the Welfare Association was slight, but the assistance and feeling of security given this employee was immeasurable.

What Can the Nurse Do?

BUT let us consider the industrial nurse who serves chiefly in a first-aid department and who very seldom is in contact with the family of the employee. How does she best serve in a sickness prevention program?

Here, again, her knowledge of the personnel is indispensable. She should review the personal record of the employee with the employment manager to obtain a better understanding of the individual. This should be followed by a study of the employee's job: where he works and under what conditions, especially the sanitation; the product manufactured, and the raw materials it is made of. There the nurse may obtain valuable information as to latent hazards that eventually may affect the health of the employee, oftentimes recognized too late to be cured.

From this and a study of past sickness she maps and carries out her program of prevention as follows:

1. By suggesting better working conditions, such as improved illumination, sanitation, housekeeping, ventilation, and the use of proper and adequate protective equipment.

2. By education of the employee to higher health standards. This requires constant efforts through bulletin boards, mass meetings, news items, and personal contacts. Articles in plant magazines are far reaching, and pay-envelope inserts discussing health topics have proved beneficial.

3. By advising and assisting the employee in securing the correction of physical defects and social maladjustments.

The following case is an example:

An employee had repeated attacks of rheumatism and had been advised by the family physician to have his teeth extracted, but he did not know where he would get the necessary dental fee.

Our plant had introduced a plan whereby our employees were allowed dental services, in special cases, through the Welfare Association. If an employee was a reliable workman and had been with the company for more than six months, his financial condition was investigated. If he were honest but having a difficult time establishing his credit, he was given an order to one of three dentists who, we were assured, were giving our employees fine dental care at a minimum charge. The dentists were glad to render this service, for they were not only sure of their accounts but were also increasing their practice by developing new contacts. This employee as well as many others profited by the plan.

Opportunities on Every Hand

THE following are only a few examples of a nurse's function in an industrial health program:

Three employees from the same

---

* Presented before the Industrial Nursing Section, National Safety Congress, Kansas City, Missouri, October 13, 1937. Published in *Public Health Nursing*, February, 1938.

THE AMERICAN ASSOCIATION

of

INDUSTRIAL PHYSICIANS and SURGEONS

Component Societies

Central States Society of Industrial Medicine & Surgery

Association for the Advancement of Industrial Medicine & Surgery

THE object of this Association shall be to foster the study and discussion of the problems peculiar to the practice of industrial medicine and surgery; to develop methods adapted to the conservation of health among workers in the industries; to promote a more general understanding of the purposes and results of the medical care of employees, and to unite into one organization members of the medical profession specializing in industrial medicine and surgery for the mutual advancement in the practice of their profession.

OFFICERS

President: Dr. Royd R. Sayers,
U. S. Public Health Service, Washington, D. C.

President-elect: Dr. Clarence D. Selby,
General Motors, Detroit, Michigan

1st Vice-Pres.: Dr. McIver Woody,
Standard Oil Co., New York City

2nd Vice-Pres.: Dr. Daniel L. Lynch,
New England Telephone & Telegraph Co.,
Boston, Massachusetts

Sec'y-Treas.: Dr. Volney S. Cheney,
Armour & Company, Chicago

DIRECTORS

1936-1938	1937-1939
Dr. Floyd E. Shaffer, Bethlehem Steel Co., Sparrows Point, Md.	Dr. Alfred H. Whittaker, Insurance Companies, Detroit, Mich.
Dr. John J. Wittmer, 4 Irving Place, New York City	Dr. Edward C. Holmblad, Railway Express Agency, Chicago, Ill.
Dr. George H. Gehrmann, Du Pont Company, Wilmington, Del.	Dr. Robert P. Knapp, Cheney Brothers, South Manchester, Conn.
Dr. Thurman H. Lautenschlager, Dayton Industrial Surgery, Dayton, Ohio	Dr. Otto P. Geier, Cincinnati Milling Machine Co. Cincinnati, Ohio
Dr. Archibald W. George, Packard Motor Car Co., Detroit, Mich.	Dr. Andrew M. Harvey, Crane Company, Chicago, Ill.
Dr. Loyal A. Shoudy, Bethlehem Steel Co., Bethlehem, Penna.	Dr. C. F. N. Schram, Tennessee Eastman Corp., Kingsport, Tenn.

PROGRAM COMMITTEE

Edward C. Holmblad, M.D., *Chairman*	Wm. D. McNally, M.D.
Volney S. Cheney, M.D.	Clarence O. Sappington, M.D.
Andrew M. Harvey, M.D.	Fred W. Slobe, M.D.
	Frank P. Hammond, M.D.

ANNUAL MEETING

THE 1938 Annual Meeting of the American Association of Industrial Physicians and Surgeons, and the 1938 Midwest Conference on Occupational Diseases, will be held at the Palmer House, Chicago, June 6, 7, 8 and 9, 1938.

department made frequent trips to the first-aid station asking for headache medicine. A review of their personal record cards indicated normal health and habits. A trip to the department revealed inadequate and glaring lights. A proper survey not only corrected the condition from a physical standpoint but likewise increased production to such an extent that a similar survey was made throughout the plant.

The use of corners by employees as a place to expectorate was effectively solved by painting white triangular areas in the corners and providing convenient cuspidors.

A high incidence of indigestion nausea, and fatigue is often traceable to improper ventilation, suggesting the need of proper air-conditioning or protective equipment to eliminate this hazard.

Selling the Idea to Management

IT IS quite true that such a program presents a real problem in selling the idea of sickness prevention to executives—but patience and frequent reference to the time lost through sickness will eventually bring results.

How frequently and to what extent sickness among employees is a factor in causing lost-time accidents is often revealed when a thorough investigation is made of all incidents leading up to the accident. Such facts properly presented enable one to improve plant conditions so as to bring about better health.

A considerable part of the sickness prevention program is education.

Very few employees, for example, realize that they have more leisure time than they have ever had before. The employee should be taught to use this with discretion. Today we practically have a national 40-hour work week, and allowing at least 56 hours for sleep, we find the employee has 72 hours left out of every week to use as he may desire.

Does he spend his idle time disastrously, thus adding fatigue to an already fatigued body? To safeguard against this it is well worth while to afford him recreational facilities, stimulating in him a desire for hobbies, home ownership, or any other activities that may enable him to spend his time more profitably.

A definite program of talks and discussions on better health may be profitably planned during the winter months. The National Safety Council and leading insurance companies can provide excellent material for these discussions. State and national health departments are glad to furnish valuable information free of charge. Local physicians are pleased to talk to the employees on sickness prevention. A wide variety of resources are available, including local, state, and national health agencies.

Eczematoid Lesions Following Occupational Dermatitis Venenata

THE dermatologic sequelae of the occupational dermatitides have presented a problem to both the physician and the Industrial Commission.*

The patient presents himself with a true picture of dermatitis venenata which subsides following various therapeutic measures. Several weeks later the patient, who may or may not have resumed his work, returns with an eczematoid process unlike the original dermatitis.

He may present: (1) Pruritus with scratched crusted lesions as are often found following nickel poisoning, (nickel itch). (2) Lichenoid areas composed of violacious flat topped lesions superimposing the original affected areas. (3) Papular and pustular elements which often are pierced by a hair (folliculitis) and many times arise from trauma, scratching, and rubbing. (4) A vesicular type of lesion which is composed of vesicles containing a clear fluid accompanied by oozing and fissuring. The above are often of entirely different character from the original dermatitis and it is often difficult to determine compensability.

Many factors predispose to the formation of the secondary eczema. (1) Some of the patients will give history of a definite allergic background—hay fever, asthma, or infantile eczema, or a family history of allergy. (2) Examination of the feet often discloses maceration and vesiculation between the toes, which according to Peck give rise to secondary dermatophytids and sensitize the entire organisms as a result of absorption of trichophytin by-products. (3) The retention of metals and their products such as lead, nickel, chrome, copper, etc., would tend to precipitate eruptions from time to time by irritating the pilosebaceous apparatus. Chlorine often results in acneiform lesions due to the absorption and local irritation. (4) Dyshidrotic lesions may be found on the fingers and webs resulting from dysfunction of sweat glands following destruction.

Symptoms and Course

FOLLOWING a dermatitis from varied industrial irritants, the acuteness of the process subsides. There then ensues, mostly over the original areas, any one of the above described eczemas. This may immediately follow the acute process or occur several weeks later. Pruritis is usually the predominant symptom. Lesions may appear on unexposed areas such as the nape of the neck, flexor surfaces of the extremities, and occasionally on the abdomen, and back.

In numerous cases where contact with the original offending agent has

* I. L. SCHONBERG, M.D., and A. MARCUS, M.D., Cleveland. *Ohio State M. J.*, February, 1938.

AMERICAN ASSOCIATION of RAILWAY SURGEONS

1937 - 1938

Officers

President ..... HARVEY BARTLE, M.D., Philadelphia, Penn.
Vice-President ..... FRANK DINNEN, M.D., Cleveland, Ohio.
JOHN HAYDEN, M.D., Kansas City, Mo.
WILLIS C. CAMPBELL, M.D., Memphis, Tenn.
Treasurer ..... T. L. HANSEN, M.D., Chicago, Ill.
Secretary ..... D. B. MOSS, M.D., Chicago, Ill.
(Phone WABash 2345)

Executive Board

G. G. DOWDALL, M.D. ..... Chicago, Ill.
JOHN R. NILLSON, M.D. ..... Omaha, Nebr.
J. G. FROST, M.D. ..... Chicago, Ill.
A. R. METZ, M.D. ..... Chicago, Ill.
W. J. LANCASTER, M.D. ..... Wilmington, N. C.
W. A. McMILLEN, M.D. ..... Charleston, W. Va.

ASSOCIATION OF SURGEONS OF THE NEW YORK CENTRAL SYSTEM

OFFICERS

President:
H. G. FARMER, M.D.
Vice-Presidents:
R. R. RYAN, M.D.
C. E. CASE, M.D.
B. J. LARKIN, M.D.
J. B. BRADLEY, M.D.

Secretary-Treasurer:
H. A. FATHAUER
Office of Secretary-Treasurer
413 LaSalle Street Station.
Chicago, Illinois.
Telephone WABash 4200

EXECUTIVE COMMITTEE

B. L. COLEY, M.D., F.A.C.S.
Chief Surgeon, New York City
L. A. ENSMINGER, M.D., F.A.C.S.
Chief Surgeon, Indianapolis
H. A. FATHAUER,
Secretary-Treasurer
GEORGE P. MYERS, M.D., F.A.C.S.
Medical Director, Detroit
F. E. PIERCE, M.D., F.A.C.S.
Chief Surgeon, Chicago.
S. B. TAYLOR, M.D., F.A.C.S.
Chief Surgeon, Columbus
G. R. WINTERS, M.D., F.A.C.S.
Chief Surgeon, Pittsburgh
H. G. FARMER, M.D.,
Watertown, N. Y.

OLIVER G. BROWNE, General Claims Attorney

ASSOCIATION OF SURGEONS OF THE SOUTHERN RAILWAY SYSTEM

OFFICERS

President:
J. C. AUSTIN, M.D.
Knoxville, Tenn.
1st Vice-President:
W. H. FRAMPTON, M.D.,
Charleston, S. C.
2nd Vice-President:
J. H. ALLEN, M.D.,
Rutherford, Tenn.
3rd Vice-President:
D. S. MIDDLETON, M.D.,
Rising Fawn, Ga.
4th Vice-President:
F. WEBB GRIFFITH, M.D.,
Asheville, N. C.

Secretary-Treasurer:
EDITH A. FOLTZ,
Office of Treasurer
Railway Building,
Washington, D.C.
Recording Secretary:
W. W. HARPER, M.D.,
Selma, Ala.
Asst. Recording Secretary:
W. H. BLAKE, M.D.,
Sheffield, Ala.

GLENN I. JONES, M.D., Chief Surgeon,
Washington, D.C.

The Industrial Doctor
OFFICIAL SECTION OF THE NEW YORK STATE SOCIETY OF INDUSTRIAL MEDICINE

Published under supervision of the Ways and Means Committee of the New York State Society of Industrial Medicine. Editorial office, F. E. Redmond, Managing Editor, 361 Delaware Avenue, Buffalo, N. Y. Articles appearing herein do not necessarily reflect the opinion or policy of this journal nor of the New York State Society of Industrial Medicine.

Editorial Board

B. J. Slater, M.D.
E. T. Wentworth, M.D.
M. S. Bloom, M.D.
A. R. Grant, M.D.
Raymond C. Almy, M.D.
Paul B. Jenkins, M.D.
Willis C. Templer, M.D.
Chas. P. Hutchins, M.D.
P. L. Forster, M.D.
A. M. Dickinson, M.D.
Chas. D. Squires, M.D.
Richard S. Farr, M.D.
C. W. Woodall, M.D.
Francis J. Ryan, M.D.
M. W. Stofer, M.D.
D. C. O'Connor, M.D.
F. N. C. Jerauld, M.D.
E. MacD. Stanton, M.D.
E. A. VanderVeer, M.D.
H. H. Baker, M.D.
R. E. Fenner, M.D.
O. A. Brenenstuhl, M.D.,
John L. Norris, M.D.,

Frank E. Redmond, *Managing Editor*
361 Delaware Ave., Buffalo, New York

The New York State Society of Industrial Medicine

Officers

E. A. Vander Veer, M.D.
President
Paul B. Jenkins, M.D.
1st Vice-President
A. R. Grant, M.D.
2nd Vice-President
Raymond C. Almy, M.D.
Treasurer
Frank E. Redmond, *Executive Secretary*

Directors

Dr. Raymond C. Almy, Auburn
Columbia Rope Co.
Dr. H. H. Baker, Rochester
423 Granite Bldg.
Dr. O. A. Brenenstuhl,
Albany
Dr. R. E. Fenner, Syracuse
433 S. Salina St.
Dr. Philip L. Forster, Albany
363 State St.
Dr. A. R. Grant, Utica
321 Genesee St.
Dr. Chas. D. Squires, Binghamton
28 Conklin Ave.
Dr. Willis C. Templer, Corn
Corning Glass Works
Dr. C. P. Hutchins, Syracuse
Aetna Life Insurance Company
Dr. Francis J. Ryan, Syracuse
New York State Railways
Dr. B. J. Slater, Rochester
Eastman Kodak Company
Dr. A. M. Dickinson, Albany
New York Central R. R.
Dr. Edw. T. Wentworth, Rochester
Dr. M. W. Stofer, Norwich
Norwich Pharmacal Company
Dr. M. S. Bloom, Binghamton
Dunn & McCarthy
Dr. E. MacD. Stanton, Schenectady
American Locomotive Company
Dr. F. N. C. Jerauld, Niagara Falls
Dr. Donald C. O'Connor, Buffalo
International Railways
American Radiator Co.
Dr. Richard S. Farr, Syracuse
Consulting Orthopedist
Dr. C. W. Woodall, Schenectady
146 Barrett St.
Dr. John L. Norris,
Rochester

1938 Annual Meeting at Albany, New York

OFFICERS

Chairman of the Board: Frank P. Hammond, M.D., F.A.C.S.
6308 Cottage Grove Ave., Chicago.

President: Kellogg Speed, M.D., F.A.C.S.,
122 South Michigan, Chicago.

Vice-President: Edward C. Holmblad, M.D., F.A.C.S.
28 East Jackson Blvd., Chicago.

Secretary-Treasurer: John D. Ellis, M.D., F.A.C.S.,
122 S. Michigan Ave., Chicago.

BOARD OF GOVERNORS

Harry E. Mock, M.D., F.A.C.S.,
R. A. Jacobson, M.D. W. F. Lyon, M.D.

been avoided, the eczema will persist. The majority of cases have cleared subsequently to the usual methods employed in the treatment of allergic eczema. A few have been of the chronic and recurrent type of eczema.

Treatment

IN CASES that have presented a moist oozing type of eczema, wet dressings of Liquor Burrow 1-6 have been effective. When the above type has become superinfected, weak potassium permanganate soaks are efficacious. This is followed by a mild crude coal tar (1%) in Lassar's paste gradually increasing the strength of the tar as the lesions subside. In recalcitrant types x-ray therapy is advisable. For dry types of eczema, oil of cade (5%) in equal parts of white vaseline and lanolin is of great value.

Soaps and water are to be avoided, since alkalies present in various soaps tend to irritate the process. As a result of destruction of the horny layers, water, which is readily absorbed, often results in irritation. Oil is used for cleansing.

Internally calcium gluconate intravenously and dicalcium phosphate by mouth are valuable adjuvants to therapy.

Autohemotherapy may be used in stubborn cases.

Prophylaxis is of prime importance. We suggest: (1) A careful history by the plant physician in regard to allergic background. Allergic applicants should not be exposed to chemicals of any type. Patch tests should be performed. (2) Proper protection with rubber gloves and aprons. (3) The use of protective creams and oils on the hands and face of all workers exposed to chemical fumes. (4) The immediate treatment of all workers presenting skin irritation even though the involvement seems insignificant.

Summary and Conclusions

THE types, apparent etiology, symptoms and treatment of eczematoid lesions following occupational dermatitis are reported.

2. A plan of prophylaxis is suggested.

3. We believe that many chronic eczemas following occupational dermatitis could be avoided and that the duration of treatment could be greatly reduced if this plan is instituted.

Bibliography:

Peck, S. M.: Epidermatophytosis of the Feet and Epidermophytids of the Hands. *Arch. Dermat. & Syph.*, 1930, No. 22.

Peck, S. M. and Solamon, G.: Eczema due to Fungus. *Arch. Dermat. & Syph.*, 1931, No. 24.

Goldsmith: Recent Advances in Dermatology.

Harris, K. E.: Observations upon Histamine-like Substance in Skin Extracts. *Heart*, 1927, No. 14.

Sulzberger, Rosenberg and Sher: Acneiform Eruptions, *New York State M. J.*, 1934, No. 34.

Malingering

MALINGERING, especially in connection with claims for compensation, may often be very difficult to detect, but there are a number of tests which will give much help in that direction.*

The tests for mental fatigue may bring out simulation. Thus, suppose the patient be given a number of simple calculations to do and is told to strike out the letter "s" wherever it occurs in a newspaper column. The real neurasthenic will start off with fairly good speed and accuracy, and after a few minutes begin making mistakes which increase in frequency as the test is prolonged. At the same time there may appear accessory evidence of fatigue: perspiration, tremor, tachycardia, and cerebral congestion. On the other hand the malingerer, suspecting that a faulty showing is expected of him, begins to make mistakes from the first, complaining that he "can't keep his mind on anything." The ergograph should be used also. In the healthy man the tracing is convex; in the neurasthenic straight for a time and then concave; in the hysteric concave. The malingerer, on the other hand, produces a curve with inexplicable contradictions.

Tremor is hard to imitate, and the fibrillary tremor of certain muscles impossible. A simulated tremor ceases when the patient's attention is distracted. In cases of contracture of the arm, cyanosis and atrophy, it must be remembered, do not exclude simulation, as these symptoms may be caused by bandaging and disuse. Have the patient stand for a few minutes, and if the leg on the same side becomes cyanosed and its foot colder than the other one, it speaks against simulation.

We sometimes see a patient complaining of headache, insomnia, and vertigo, with the idea doubtless that these are all symptoms whose nonexistence cannot be proved, but which at the same time furnish a fairly respectable nervous syndrome. Of the three named, headache is the hardest to disprove, but we should notice how the patient describes his headache voluntarily, without any leading questions.

The headache of the true neurasthenic is usually described as a feeling of pressure either from within or without the skull. They frequently state that their head feels "as if it would split," or as if there were a tumor growing in the brain. Furthermore, we often see, associated with the complaint of headache and tending to prove its authenticity, vasomotor disturbances such as marked flushing of the face and mucous membranes or alternate flushing and pallor.

Insomnia can hardly be present to any extent without evidence of deranged nutrition, even emaciation. If

* John E. Lind, M.D., Washington, D. C., in *Med. Rec.*, reprinted in *Clin. Med. & Surg.*, February, 1938.

The Association for the Advancement of Industrial Medicine and Surgery

Inc.

Executive Office - 370 Lexington Avenue, N. Y. (Room 904)

PURPOSE: *To disseminate accurate medical knowledge in reference to the diagnosis and treatment of all conditions arising out of and in the course of employment.*

OFFICERS

President:
J. J. Wittmer, M.D.
4 Irving Place,
New York City

Recording Secretary:
David Shapiro, M.D.
41 East 42nd St.,
New York City

Vice-President:
Fred H. Albee, M.D., F.A.C.S.
57 West 57th St.,
New York City

Treasurer:
Joseph L. Ramirez, M.D.
30 Fifth Ave.,
New York City

Executive Secretary:
J. J. Blackford, 370 Lexington Ave., New York City
(CAledonia 5-9753)
Robert F. Coleman, Inc.

EXECUTIVE COUNCIL

Dr. J. Hudson Blauvelt.....Fidelity & Casualty Insurance Co.
Dr. T. Wallis Davis.....Borden Company
Dr. Lyle Ellis.....Travelers Insurance Co.
Dr. Halcyon Halstead.....Globe Insurance Co.
Dr. Burke C. Hamilton.....Aetna Life Insurance Co.
Dr. George A. Koenig.....National Biscuit Co.
Dr. Willis W. Lasher.....Employers Liability Assurance Co.
Dr. Frederick L. Mosser.....Third Ave. Ry. & Bus Lines
Dr. Arthur R. Tilton.....Travelers Insurance Co.

DUST IN INDUSTRY — What the hazards are; how to determine their existence; how to combat them.

INDUSTRIAL DUST

Hygienic Significance, Measurement and Control

By Philip Drinker *and* Theodore Hatch
Harvard School of Public Health
316 pages, 6x9, 104 illustrations,

$4.00 Plus Postage

This book covers the problem of dust control in its relation to the health of workmen, emphasizing the cooperative nature of the problem both for physicians and engineers, and presenting principles, methods and data for the design and operation of dust-control equipment. It discusses the physical aspects of dust and fume suspensions and their effect upon man; the analysis, measurement, and microscopy of fine dusts; and the practical control of dusts and use of respiratory protective devices.

INDUSTRIAL MEDICINE
540 No. Michigan Ave.,
Chicago, Illinois.

Central States Society of Industrial Medicine and Surgery

Component Society of the American Association of Industrial Physicians and Surgeons

1937-38 OFFICERS

PRESIDENT ..... DR. FREDERICK W. SLOBE..2024 S. Western Ave Chicago.
VICE-PRESIDENT ..... DR. DON DEAL.....First National Bank Bldg., Springfield, Ill.
SECRETARY-TREASURER.. DR. FRANK P. HAMMOND....6308 Cottage Grove Ave., Chicago

BOARD OF GOVERNORS

1938
DR. JAMES H. FINCH.....Champaign, Ill.
DR. F. J. OTIS.....Moline, Ill.
DR. RALPH M. CARTER.....Green Bay, Wis.

1939
DR. GEORGE L. APFELBACH....645 Fullerton Pkwy., Chicago
DR. ROBERT L. KERRIGAN.....Michigan City, Ind.
DR. WILLIAM C. GOENNE.....Davenport, Iowa

1940
DR. GEORGE W. STABEN.....Springfield, Ill.
DR. HAROLD A. VONACHEN.....Peoria, Ill.
DR. W. M. HARTMAN.....Macomb, Ill.

Chicago Society of Industrial Medicine and Surgery

1937-38 OFFICERS

PRESIDENT ..... DR. FRED G. CARLS.....5607 Roosevelt Road, Chicago.
VICE-PRESIDENT ..... DR. GENE BURROWS.....2301 S. State St., Chicago.
SECRETARY-TREASURER.. DR. FRANK P. HAMMOND....6308 Cottage Grove Ave., Chicago.

BOARD OF GOVERNORS

1938
DR. O. WALTER REST.....4157 S. Halsted St., Chicago.
DR. FREDERICK W. SLOBE....2024 S. Western Ave., Chicago.
DR. EDGAR A. DEGENHARDT....4805 Fullerton Ave., Chicago.

1939
DR. JOHN G. FROST.....718 E. 63rd St., Chicago.
DR. FELIX M. JANSEY.....30 N. Michigan Ave., Chicago.
DR. CLARENCE W. HENNAN.....841 E. 63rd St., Chicago.

1940
DR. FRED M. MILLER.....2136 Indiana Ave., Chicago.
DR. JAMES A. VALENTINE.....1608 W. 22nd St., Chicago.
DR. EMILE C. DUVAL.....105 W. Madison St., Chicago.

Michigan Association of Industrial Physicians and Surgeons

Officers

PRESIDENT ——— A. H. WHITTAKER, M.D., F.A.C.S. Detroit
VICE-PRESIDENT ——— LEON SEVEY, M.D. Grand Rapids
SECRETARY-TREASURER ——— DON F. KUDNER, M.D., F.A.C.S. Jackson

Board of Directors

L. H. CHILDS, M.D. ——— Flint
CARL E. BADGELY, M.D., F.A.C.S. ——— Ann Arbor
HENRY J. PYLE, M.D. ——— Grand Rapids

possible, as it is in military life, the patient should be placed in a hospital and watched carefully.

If the complaint of vertigo exists, the patient should not be let off with the statement that he has "dizzy spells," but should be required to describe exactly how they affect him. A characteristic description of the neurasthenic is that the floor seems to be giving way under him and that he is afraid. The malingerer, on the contrary, is apt to say that "everything seems going around," as he has heard that description given of vertigo. In this connection it should be mentioned that, in cases of head injuries, we should never neglect examination of the ear for signs of vestibular irritation.

A whole volume might be written about pain in the back, its etiology, treatment and simulation, but we must be content here to outline a few of the main points by which we detect the malingerer. Most fraudulent-minded persons are aware that it is a common symptom, easy to simulate and difficult to pronounce spurious. It must be borne in mind also that unqualified simulation is rare, the usual circumstances being the exaggeration of a slight disability.

WHEN the patient making such a complaint enters the room, we observe him narrowly. In real cases of severe lumbar pain the tendency is to immobilize that part of the body as much as possible; every movement is tentative and any position is shirked which would bring increased tension upon the implicated tissues. We should watch for these symptoms, the absence of one or more of which points to simulation, or at least exaggeration: (1) rigidity of the back; (2) a cautious and groping walk; (3) bending forward with a list to one side; (4) sitting down gingerly and rising by supporting the thighs.

We then have the patient undress, noting whether or not he winces when movements calculated to provoke pain are made. Detection is something accomplished by directing the patient to allow his trousers to fall about his feet, under pretense of examining something about the groin. The doctor then turns away and tells the patient to come nearer. As he does so he instinctively stoops to pull up his trousers so they will not tangle his feet. Or when he is sitting upright in a chair we ask him to straighten his knees. The malingerer is not aware that to do this involves a strain on his dorsal muscles and fasciae and may do it without wincing.

Many other tests may be mentioned, and the ingenious physician will invent some for himself. In general we may say, however, that what we find in the malingerer is *inconsistency*. For example, if a movement causes pain, any other movement which involves that muscle will cause pain if that pain be genuine. The malingerer, unaware that two muscular movements, having nothing apparently in

common, may involve the same muscle, states that one pains him and the other does not, thus exposing himself.

In regard to tenderness on pressure, the chief symptoms indicative of its real presence are swift withdrawal of the sensitive part when pressed, even when attention is distracted, and changes in the pulse rate, arterial tension, and the pupils.

The exaggeration of deep reflexes may be simulated, but the response, in the knee jerks for example, is likely to be delayed or to anticipate stimulation. Thus if the examiner makes a feint at tapping the tendon, stopping his hammer or hand abruptly before reaching it, there may be an exaggerated response. Or if he blindfolds the patient, the latter, alertly anxious for the stimulation, may show a response with no stimulation or the response may be delayed. The facial expression of the true neurasthenic, or hysteric, is almost impossible to simulate.

True malingering, on no basis at all, is very rare, and exaggeration of actual symptoms very common, so that, in forming an estimate of the truth or falsity of the patient's ailments, we must take into consideration the *tout ensemble*, remembering that extremely bizarre syndromes may occur as the result of trauma, physical and psychic.

Regarding Filing of Claims

IT SHOULD be apparent to both employers and claimants, that it is practically impossible to pass intelligently upon the merits of a claim where the facts surrounding the accident, the nature and extent of the injury and other necessary information are not clearly set out in the original application.* Intelligent consideration of claims and equitable adjustments of them, are something its administrators owe to the State Insurance Fund if its stability is to be maintained.

"All too often claims come into commission offices which have apparently been made out by persons having absolutely no knowledge of the salient facts attending the accident and the injury sustained. They bear every indication of having been made out without consultation with the employer or supervisory authorities who should be in possession of the facts. In consequence, there is an unavoidable delay for investigation, in many instances, on claims that should be a mere matter of routine.

"This slipshod method of handling claims is not only unjust to the commission, in that it brings on unmerited criticism for delay in the disposition of claims, but it is also a serious detriment to both the employer and the employee. It takes time, effort and money to delve for

* From a statement by JUDGE THOMAS M. GREGORY, Chairman of the Industrial Commission of Ohio.

SIMULTANEOUS LOCAL ANESTHESIA AND TISSUE PROLIFERATION

ALPARENE

A highly effective, non-toxic collodial solution producing firm, dense fibrosis. Long history of safety and dependability. 60 cc. $5.00

Write for literature

DoQUIN PHYSICIANS PRODUCTS COMPANY
75 EAST WACKER DRIVE, CHICAGO, ILL.

FOR THE AMBULANT TREATMENT OF HERNIA

LITERARY MEDICAL RESEARCH
in all its Branches
BIBLIOGRAPHIES -- ABSTRACTS
in English and all Foreign Languages
Expert Services Reasonable Fees
Address
LIBRARIAN
c/o INDUSTRIAL MEDICINE
540 North Michigan Avenue Chicago, Illinois

"This is the Ruddy you've known for 32 years"

Repairs and Fittings of all Makes

My thirty-two years' experience in specialized manufacturing of artificial legs and arms is your guarantee of perfect workmanship and complete satisfaction. We unqualifiedly guarantee all our work as to materials and fit. Proper and perfect fitting on our part assures prevention against troublesome stumps.

Male and Female Attendants

Free Consultation. Phone CENtral 9740

RUDOLPH VERBA ARTIFICIAL LIMB CO., Inc.
"When better limbs are made, Ruddy will make them"
Everything for the Crippled and Disabled.
208 North Wells St., Chicago

Behind Mercurochrome
(dibrom-oxymercuri-fluorescein-sodium)
H&D *is a background of*

Precise manufacturing methods insuring uniformity

Controlled laboratory investigation

Chemical and biological control of each lot produced

Extensive clinical application

Thirteen years' acceptance by the Council of Pharmacy and Chemistry of the American Medical Association

A booklet summarizing the important reports on Mercurochrome and describing its various uses will be sent on request.

HYNSON, WESTCOTT & DUNNING, Inc., Baltimore

facts that should have been known and set down in the original application and the expense is not entirely a burden upon the fund. It affects the employer and claimant as well.

"In this connection, employers are urged to make a close analysis of all accidental injuries, getting at the true facts of their occurrence and particularly the nature and extent of injuries. If they do this and incorporate the facts more specifically in the claimant's application, they may obviate much difficulty in the future through the resurrection of inactive claims.

"In some quarters, there is a lamentable lack of care in primary medical examinations following an injury. As a result, the groundwork is set for a revival of claims in future months or years, which may work an injustice upon either the employer or the claimant. For instance, a worker might be brought to the first aid station with a bad scalp wound. Since it is the most visible evidence of injury, it often receives the undivided attention of the doctor, whereas it may be trivial when compared with more serious internal or external injuries to the limbs or body which casual diagnosis does not reveal. Later, when the undetected injuries cause disability, it is a subject for controversy between the employer and the claimant and another needless problem for the Commission.

"It is safe to say that during the life of the Workmen's Compensation Fund, hundreds of thousands of dollars have been lost to employers as the result of superficial medical examinations and carelessness in the making out of compensation forms. And in any number of cases, there is positive evidence that latent injuries which have brought on incapacity after the time limit for the filing of claims, have worked an inexcusable injustice against injured employees. In either case, had all the facts been set out in the original claim, it would have been equitably disposed of without rancor on the part of either employer or claimant.

"It is the simple thing, and the logical thing, to get all the facts about an industrial injury. It is just as simple and just as logical, to set them out in the beginning without the necessity for expensive investigation which will eventually reveal them. But the true facts regarding an accident cannot be intelligently presented by persons not identified with the operation wherein it occurred. In the long run, every claimant will find it profitable to reach with the employer an agreed statement of facts regarding an injury and make the facts clear in the application form."

Diagnosis and Treatment of Undulant Fever

HAROLD NEWMAN, A.M., M.D.*
Clinical Ass't. in Medicine, Washington University School of Medicine, St. Louis, Missouri

IN discussing undulant fever I feel that I am touching upon a much neglected phase of medical practice. It is certainly not to our credit that most cases of undulant fever, which are finally diagnosed and appropriately treated, have been treated for some other condition first. I feel perfectly free in predicting that the next few years will show up this malady in its true light and as more and more facts become evident concerning its manifestations in the human subject, its true significance will become apparent. We have been prone to regard this disease as a rare clinical condition, to be thought of only after every other means of making a diagnosis has been tried and symptomatic treatment has failed. It is surprising how many cases have been treated as malaria, rheumatism, or simply chills and fever. How many cases are missed entirely no one will ever know.

The excuse, or at least the reason for this attitude on the part of medical men lies in the fact that this is a comparatively new disease, or at least its recognition is recent. It is only since the end of the World War that the condition has been recognized and progress since that time has been exceedingly slow. Probably more has been written and reported on undulant fever in the past 12 months, than was reported in the previous 12 years.

Malta fever, contracted by the human being from exposure to goats or by drinking infected goat's milk, has been known in the Mediterranean countries for centuries. The havoc wrought by this disease among the British troops during the Crimean War, led to extensive research which laid the foundation for much of our present knowledge concerning the disease.

In 1918, Dr. Alice Evans[1] of the Dairy Division of the United States Bureau of Animal Industry, showed definitely that the micrococcus melitensis causing Malta fever was closely related to the bacillus abortus of Bang, which causes contagious abortion in cattle and swine. Considerable controversy arose over the classification and relationship of these bacteria but such controversy is of more academic than clinical interest. Clinically it is enough for us to know that undulant fever can be acquired by the human subject from exposure to any of the three; micrococcus melitensis from the goat, bacillus abortus bovine or bacillus abortus porcine from cattle and swine. Regardless of where the disease is acquired, the clinical course in the human is practically the same. Even after Dr. Evans' work, little thought was given to the possible danger to the human, she, herself merely mentioning casually that such danger might exist. At about this time one of the experiment stations, where considerable work was being done on contagious abortion in cattle, reported that such contagion was not dangerous to the human. This statement was based on the fact that volunteers had drunk quantities of milk to which cultures of the bacillus abortus had been added, without any serious results. Whether these laboratory cultures had become attenuated, or whether the cultures were of low virulence originally, it is impossible to say. We do know that there is a great difference in the degree of virulency found in various strains of this micro-organism.

Slowly, cases of human illness in which the blood serum gave agglutination reactions to the bacillus abortus, began to be reported. Dr. Evans, herself, pioneered in this respect also, and became seriously ill with undulant fever. Doubtless cases had existed for years in this country and were never recognized. Certainly the cattle herds of America have been afflicted with contagious abortion since earliest times and it is only reasonable to believe that human beings were infected long before medical science proved the relationship of these two conditions.

At present, contagious abortion exists in cattle and swine herds, to a marked degree, in every civilized country. In our own country the economic loss to breeders of dairy and beef cattle is enormous. A similar condition exists in herds of swine. In lower animals serious constitutional illness does not occur and the disease manifests itself in the premature birth of the fetus. After aborting one or more times, the individual animal usually develops enough immunity to carry subsequent pregnancies to term. However, such an animal remains infected, probably for life, and is a constant source of danger to other animals, or to any human being who may come in contact with it, or who uses its milk in the raw state. Routine blood tests made by the various states cooperating with the Federal government, have shown enormous numbers of infected animals to be present in the dairy herds of the country. Last year Missouri, which can be regarded as being typical, reported 640,000 cattle tested, with 52,000 showing infection. For the entire country, over 12 million tests were reported and of these over one million were found to be positive reactors. With one cow out of every 12 showing infection, the opportunities for human infection are abundant.

The micro-organism responsible for contagious abortion was first isolated by Prof. Bernard Bang[2] of Copenhagen in 1897 and has since been known as

*Read before the Third Annual Meeting, Mississippi Valley Medical Society, Quincy, Ill., Sept. 29, 1937; published in *Radiologic Review*, January, 1938.

the bacillus abortus of Bang. It is a short non-motile bacillus, negative to Gram's stain and growing in laboratory cultures as an anerobe for the first few generations, unless first passed through guinea pigs. The bacillus of swine abortion disease was first described by Good and Smith[3] of the Kentucky Agricultural Experiment Station, in 1916. The bacillus isolated by them was to all practical intents identical with Bang's bacillus, except for the fact that it grew much more readily in air, on laboratory cultures.

Since the milk goat, which harbors micrococcus melitensis, is a minor consideration in this country, it follows that our cases of undulant fever in man are derived either from cattle or swine, infected with contagious abortion. Thus farmers, dairymen, veterinarians, and packing house workers are most exposed to the infected animal and frequent cases are found in these classes of our population. While infection, undoubtedly, can take place through abrasions in the skin, the usual place of ingress to the human body is through the gastro-intestinal tract. Infection thus most likely occurs from hands soiled by blood, excreta, or milk from infected animals. While raw milk as a source of infection has been minimized in some quarters, the frequency of infection in city dwellers, many of whom never see a cow or hog from one year's end to another, is enough to incriminate this carrier, should proof be needed. Pasteurization of all milk readily eliminates this source.

Laboratory workers, of course, run the constant danger of becoming infected, chiefly through their own carelessness.

UNLULANT fever in man has been elaborately classified into all sorts of types, but for practical purposes it is enough for us to recognize that the disease may be either acute or chronic. The acute type may include those rapidly fatal cases frequently called malignant, in which an overwhelming infection takes the patient off in four or five days.

Undulant fever, like tuberculosis and syphilis, seems capable of attacking any tissue or organ in the human body. Lungs, muscle and bone, joints, liver and spleen, nervous tissue and even skin, have been found to be involved. Several cases of severe encephalitis have been reported as being due to the bacillus of this disease. The disease is impossible to diagnose from the clinical signs alone. The primary symptoms are chills and fever with severe aching of joints, muscles and nerves, together with loss of appetite and general malaise. The fever curve is septic in type and resembles that seen in malaria, blood stream infection or septic infection in any area. It is this train of symptoms, common to a variety of clinical conditions, that causes the frequent errors in diagnosis, where proper laboratory help is not easily available.

The duration of the acute case may be from a few days to two or three months, depending somewhat upon the amount of resistance of the patient, the type of treatment, or the virulence of the strain of bacilli to which the victim had been exposed. Frequent remissions occur and at times the patient appears almost well, only to go down again with chills, fever and all the distressing signs of the disease. Hyperesthesia, especially of the feet, is a peculiar but rather common symptom. At times the pressure of the bed clothes is intolerable and efforts to cool the feet by immersion in cold water, or placing them on cold objects are made. We had one old gentleman who used to climb out of bed at all hours of the night in order to stand barefooted on the cold marble floor of his hospital ward, in an effort to relieve the intolerable burning of his feet.

If the disease is prolonged throughout several months, it is usually classed as chronic. The usual description of chronic undulant fever states that the disease may last two or three years. I wish to amend that statement to read that it may last 20 to 30 years, or as far as we know, for life. We have known for years that infected cattle carry infection as long as they live and eliminate infection through their milk. Why,then, should not the human being harbor infection for years and show symptoms whenever resistance becomes low?

Unpublished clinical work has shown that abortion in women has occurred, due to this infection. Many cases of chronic pelvic inflammatory disease in women have been found to be due to infection of the Bang organism. It has even been isolated from human ovarian cysts. It only awaits the publication of work already done in various parts of the country, to bring us to a realization of the seriousness of this disease and to stimulate further research which, I am sure, will bring out some surprising discoveries in the near future.

IF I may be pardoned for becoming personal, I think I can give you a better picture of what goes on in a chronic case of undulant fever. In 1917, while emp'oyed as a research assistant in Animal Pathology at the Missouri State Agricultural College, most of my work was confined to handling laboratory cultures of both cattle and swine abortion bacilli. In addition to this, I was constantly exposed to infected experimental animals, both in the field and laboratory. At that time the bacillus was considered harmless to man and, as a result, no precautions whatsoever were taken to prevent picking up infection.

While thus engaged I became ill with a strange malady, which first became apparent in fever, weakness and night sweats. Tuberculosis was, of course, suspected, but ruled out by x-ray and routine examinations. After several months of these symptoms, during which I continued to work regularly, I finally went down with a high fever and a marked skin rash, which was at first diagnosed scarlet fever, but with the disappearance of the rash in a few hours, and in the absence of any throat lesions, the diagnosis was altered and quarantine was lifted. Next appeared a marked jaundice and clay stools, which condition persisted for two weeks, finally terminating in recovery after one day in coma. Following severe tonsillitis and influenza with pneumonia, during the great epidemic of 1918, all acute symptoms subsided and I was finally restored to comparative good health. In the absence of any diagnosis of my original trouble, I am convinced that at that time I had an acute case of undulant fever, which may have been terminated by the high fever incident to the pneumonia. No laboratory tests confirmed such a diagnosis, but I am firmly convinced that this was the case.

This past summer, 20 years after the acute episode above described, I volunteered to act as control for a skin test of undulant fever, run on a suspected case. The suspect had no reaction but much to my surprise I, the control, had within twenty-four hours a marked general reaction with chills, fever and severe muscle pains, which lasted for one full day. In addition, a marked local reaction occurred with swelling, induration and edema around the point of injection, which finally ended in a deep slough. An opsonocytophagic index showed that over 90% of my leucocytes were picking up abortus bacilli and, therefore, I was infected with the disease. A low white count with a high percentage of monocytes was also present, this blood picture being typical of a chronic case of the disease.

Looking back over the intervening 20 years, it is evident to me that I have not enjoyed the perfect health to which I was accustomed prior to my first infection. As to symptoms, I know that for years I have suffered periodically with recurring attacks of muscle, joint and nerve pains, confined chiefly to the shoulders and sciatic distribution, although at one time or another, all my joints have joined in. These attacks of pain and stiffness have occurred on an average of every three or four weeks and lasted, as a rule, for two or three days. Between attacks, my general health was good. At times, chilly sensations and rarely low grade fever have been present. Vague abdominal pains frequently occurred at the same time, and on several occasions rather severe phlyctenular conjunctivitis has appeared. These symptoms have always been blamed on some hidden infection by my medical advisers, but this infection has never been found. Along the way I have parted with several teeth, a pair of tonsils and an appendix, but the aching has continued unabated, until very recently, when treatment for chronic undulant fever

was begun. At present I can thankfully say, I am definitely better, and hope further treatment will result in eventual cure.

THIS brings us to the diagnosis of undulant fever, a diagnosis which is not always easy to make. As mentioned before, clinical signs are not enough. It has been known for years that infection can be determined by the presence of agglutinins and complement fixing, immune bodies in the serum of the infected animal. These tests are used routinely by the veterinary profession in picking out infected animals. Such agglutination reactions are also found in most acute cases in the human and can be relied upon for help in making the diagnosis. Formerly, this test alone was relied upon, but unfortunately not all of the acute cases and scarcely any of the chronic ones of long standing, will show the reaction. In my own case, agglutination tests were negative. Knowing this to be true, further search must be made if a diagnosis is to be arrived at. Several years ago Huddleson and Johnson[4] of the Michigan State Agricultural College, showed that the blood of individuals, who had had no known contact with the disease, possessed little if any phagocytic activity for the organism when mixed with it in vitro. On the other hand, the polymorphonuclear cells of those having the disease, or who have had it in the past, show marked phagocytic activity. This opsoncytophagic test, which at first was of scientific interest only, has now become one of our most useful aids in handling this disease. The test has been discredited in some quarters as being too laborious to be of practical use. It is too detailed a procedure for routine office use, but is easily done by qualified technicians in a properly equipped laboratory. In my opinion, the successful treatment of undulant fever can only be accomplished by the help and cooperation of a good pathological laboratory and as far as I know, this test is the only accurate means of determining the degree of immunity which the individual possesses. Only by knowing this degree of resistance can proper treatment be instituted. The test, moreover, traces accurately the progress of treatment and helps determine the amount and the time of dosage.

It has been known for many years that infected individuals gave definite local skin reactions to intradermal injection of dilute suspensions of the organism of undulant fever. These skin reactions are of great value in detecting old long-standing cases. The test is easily made by injecting a small quantity of any of the commercial vaccines, well diluted with saline, into the skin of the forearm. The reaction begins within 24 hours and appears as a rapidly spreading area of red and indurated skin, with considerable edema. Heat, pain and itching are present, as a rule, and frequently sloughing of the superficial tissues occurs. These sloughs, incidentally, are best controlled by the application of scarlet red ointment to the sloughing area.

Before dismissing a suspicious case as negative, I would certainly use all three of these tests: agglutination, allergic skin test and opsonic index. If any of the three is positive, the diagnosis is assured.

THE treatment of this disease has always been extremely difficult. The best treatment, of course, is prevention. Exposure to infected animals is hard to control, but a proper appreciation of the dangers can go a long way toward preventing infected material from soiling the skin, or being carried to food on soiled hands.

Pasteurization of milk readily kills the organism and the widespread use of this procedure has undoubtedly kept the disease from becoming more serious than it is. Personally, I would never knowingly use raw milk, regardless of the source, nor have I done so for many years.

In an effort to wipe out the infection in dairy herds, the various states cooperating with the Federal government are now carrying on an enormous testing program with the view of eliminating or segregating the infected animals. How successful this will be, only time will tell. Certainly, unless the swine herds are also cleaned up, the problem seems hopeless, since cattle readily pick up the porcine infection. Until the disease is eliminated from dairy herds, pasteurization seems the only alternative. To illustrate this point I should like to mention briefly one case which Dr. Howard Rusk and I treated last spring. This old gentleman was in the insurance business and sold a policy to the owner of a small local dairy herd. In appreciation of this business he contracted to use milk from the small dairy, which milk, of course, was delivered in the raw state. Prior to this, he had been drinking milk from a large commercial dairy which pasteurized its product before delivery. Two weeks after starting on the raw milk, this man developed a severe case of undulant fever, which nearly cost him his life. Later investigation of the small dairy showed practically all of the cows to be infected with contagious abortion and the health authorities promptly put its owner out of business.

SIMILARLY the usual vaccine or serum now available to the professions has been a big disappointment. I realize some men have reported excellent results with this or that vaccine or serum. In evaluating a so-called cure, I feel that we must make clear just what we mean by cure. We must remember that most acute cases, if left entirely to nature, will subside in a few weeks or a few months. To give credit to any product when the symptoms might have subsided without any treatment is misleading. As illustrating how misleading these claims are, I should like to report that two of the worst cases we have recently seen, had been treated thoroughly; one with serum and one with a vaccine for which great claims are being made. If opsonic index determinations are made, it frequently will be found that such treatments actually lower resistance and in place of being benefited, the patient is really retarded, in his effort to get well. Similarly, simply quieting down acute symptoms is of little benefit to the patient, if he is faced with a lifetime of semi-invalidism from the chronic phase of the disease. What, then, have we left that will help us in treating this condition? Briefly, any measure which will bring about clinical improvement and at the same time raise the phagocytic activity of the blood, will be useful. In our experience, the only two measures which will do this are artificial fever therapy and Foshay's serum or vaccine.

Successful fever therapy has been reported through the use of intravenous typhoid injections, but since I have never used it I can only mention that it has been done. Dr. Rusk and I have used the fever machine on acute cases with encouraging results. This hypertherm treatment which is carried out under trained supervision in the hospital, is simply routine, and according to the technic about which so much has recently appeared in the literature. Just how much exposure and how often the treatment must be given remains to be worked out, but we do know that fever therapy will raise the phagocytic power of the blood and will quickly abolish acute symptoms. Just how this therapy accomplishes this it is hard to say. Certainly, the temperature is not enough to kill the organisms. Possibly certain chemical changes take place within the body tissues, which either stimulate immune reactions, or else render such tissue unsuitable for the continued growth and reproduction of the bacilli.

The other effective treatment, which I have seen give excellent results, makes use of Foshay's serum or vaccine. Dr. Lee Foshay, of the General Hospital in Cincinnati, has developed a method of destroying the virulency of the organism without injuring its antigenic properties. Unfortunately, these products are not yet on the market for general use, but to my mind they represent the one reliable agency for controlling the disease. The serum is usually given in acute cases, or those of recent origin and showing marked symptoms. The vaccine, which must be used in small doses over long periods, is usually reserved for more chronic cases. Care must be used even with this product, since too great or too

rapid increase in dosage will bring about a relapse and a rapid fall in phagocytic power of the blood. Its proper use, however, offers by far the best method of treatment, so far available to the profession. Its speedy availability to the general profession is greatly to be desired.

In conclusion I should like once more to call attention to the fact that in undulant fever we are dealing with a real menace, the dangers of which are not yet fully realized by the profession.

The difficulty with which treatment is carried out makes preventive measures greatly to be desired and a careful study of this disease by the members of our profession is one of the pressing problems of our day.

Bibliography:

EVANS, ALICE C.: "Further Studies on Bacterium Abortus and Related Bacteria", *J. Infect. Dis.*, 22:580, 1918.

BANG, BERNARD: "The Etiology of Epizootic Abortion", *J. Comp. Path. & Therap.*, 10:125, 1897.

GOOD, E. S., and SMITH, W. V.: "Bacillus Abortus (Bang) As An Etiological Factor in Infectious Abortion in Swine", *J. Bact.*, 1:415, 1916.

HUDDLESON, I. F. and JOHNSON, H. W.: "Phagocytosis of Brucella, An Index of Immunity to Undulant Fever in Man", *Science*, 74:315, 1931. Also Ann. Report of Bacteriologist, in Report of Div. of Vet. Sci.. Michigan State Col.; 32, June 30, 1931.

Traumatic Emergency Surgery

C. P. AUSTIN, M.D.,
Douglas, Arizona

TRAUMATIC emergency surgery has become quite a problem within the last two decades with the ever increasing number of automobiles and aeroplanes.* These accidents far outnumber our industrial accidents, and are, I think much more severe, taken as a whole.

Our industrial plants have adopted many safety measures which are rigidly enforced and, on this account we see a small percentage of accidents now in comparison to the number we saw 20 years ago.

No attempt can be made in a limited time to classify types of injury or dwell on the treatment of any particular class. The need for the administration of such things as anti-tetanic serum, or preventive injections for gas gangrene, will vary even more, according to locality than to type of injury. A broad survey only may be attempted.

Our first consideration in an injury if there is active hemmorhage, is to control hemorrhage either by tourniquet, hemostats, or ligatures. Then turn our attention to treating shock, although this procedure may have to be reversed in some cases of internal hemorrhage in extreme shock, where immediate operative intervention might precipitate death, but the operative procedure must be applied early before a rising blood pressure causes more loss of blood. The causes of shock are many and varied. Time will not permit a review; however, I think all agree that the restoration and maintenance of circulating blood volume may be accepted then as of basic importance in the treatment of shock. The problem of treating shock is inseparably connected with the maintenance of blood volume, as determined by blood pressure. When the degree of shock is severe no matter what line of treatment is followed, it may fail.

Our first attention is the alleviation of fear and pain. This is done by reassurance and administering sedatives, usually morphine, complete rest and heat, and elevation of foot of bed. This must often take precedence over x-rays, etc.

In recognizing the loss of blood volume as the essential etiologic factor, the restoration of blood volume must be acknowledged as the all important measure. In mild cases of shock a liter or two of 5% glucose in a physiologic solution of sodium chloride will suffice. But in the more severe cases that require a solution that diffuses less rapidly, we find there is nothing that will take the place of fresh blood. Acacia solution is next best if no suitable donor for transfusion can readily be found. We also use pitressin which has given some results. Caffeine may be used for its stimulating effect. But our sheet anchor is always morphine given to physiological effect, except in head injuries. Head injuries should receive no morphine, no intravenous medication, (except transfusion at times). Heat, elevation of the head of the bed, limitation of liquids, and spinal taps as indicated.

Fractures

IN TAKING up the treatment of fractures I think nothing is more essential than to have a mental picture of the pathology associated with your injury.

Following fracture there is hemorrhage into the tissue surrounding the bone, as well as into the bone. There is tearing and destruction of countless numbers of blood and lymph channels, and thrombosis of others. There is death of tissue, which acts as a local toxic irritant. The net result is an acute inflammatory reaction with marked exudation and cellular infiltration, causing muscular spasm which reaches its height about 12 hours after injury.

The muscles become inextensible lardaceous bodies, that will tear but will not stretch.

At about this time organization of this process begins. The inflammatory exudate and hemorrhage show fibroblastic growth which is converted by the process of repair into tissue.

With the foregoing knowledge always in mind we have followed a few special principles.

First, the initial examination is made with the least possible trauma, and if there is a deformity the patient is *not* subjected to the examination of false motion, crepitation, etc., but we proceed to our second principle which is, immediate immobilization as extensive as possible. The purpose of this is to minimize the amount of inflammatory process, to prevent further damage to the parts by fragments and cause the patient as little pain as possible.

Reduction should be as soon after injury as possible, with the least amount of trauma and always under an anesthetic. Fourth, we try to keep in mind the future function with the least time required in complete immobilization. The final principle is the starting of functional treatment as soon as consistent that the patient may bring certain groups of muscles into action.

There are no hard and fast rules that can be laid down in the treatment of fractures of the long bones. We use manual manipulation followed by immobilization, traction suspension, and operative reduction. We try to select the type of treatment most suited to the individual case.

I believe there should be no quarrel between the closed and open methods of reduction. If the open method is to be used, it should be used in selected cases at the time of injury, and not only in cases where other methods have failed. I have used metal splints on numerous occasions with good results to the patient and a great deal of satisfaction to myself.

The value of debridement in extensive heavily soiled wounds is well known since the World War; and the use of suitable metal fixation in fractures with this type of soft tissue injury is not contra-indicated as callus will form and our fixation splints may then be removed.

In badly comminuted fractures we are quite partial to Parham-Martin bands and find that about two properly placed serve to handle even the most severe cases and, like the plates, can be easily removed after they have served their purpose.

Anesthesia

AS PREVIOUSLY stated, whenever any change or manipulation of fragments is indicated, an anesthetic should be used. This assures complete relaxation of muscles and less danger to the soft parts.

We have always used a general anesthetic, however, recently we

*Read before the 46th Annual Session of the Arizona State Medical Association, April 1-3, 1937, Yuma, Arizona; published in *Southwestern Medicine*, January, 1938.

have been using a local anesthetic 10 to 22 cc. of 2% novocain injected at the site of fracture into the clot. If this is used before organization, the diffusion is perfect and you get complete relaxation.

Spinal anesthesia is excellent in cases of fracture of the lower extremities. We have never found it necessary to use more than 100 mg. of novocain to obtain and maintain relaxation for about one hour.

Summary:

THE principal features of emergency traumatic surgery are:

1. Control hemorrhage.
2. Combat shock.
3. Prevent infection.
4. Restore function.
5. Only the surgical judgment acquired by proper training and lots of experience will enable a surgeon to choose the proper procedure in treating the many problems presented by the multiplicity of injuries arising in traumatic emergency surgery. The ingenuity of the best may be taxed at times.

Discussion:

DR. NORMAN ROSS: The multiplicity of injuries may tax the ingenuity of the best surgeons.

As with industrial surgery every one does emergency traumatic surgery —it is not the element of financial reward here, but rather all laws permit the giving of first aid treatment. Who says what is first aid, what is emergency treatment? The Red Cross and the Boy Scouts all attempt it and this highly specialized branch of surgery becomes the duty of every class of layman, every type of specialist as well as surgeon. We encourage this. Within one month from graduation most of us were traumatic emergency surgeons; many internships consist of the treatment of emergencies and the giving of intravenous.

The Future Development of Sound Industrial Relations

T. G. ROSE,*
General Director, National Institute of Industrial Psychology

IT IS customary to accept the phrase "industrial relations" as referring to the contacts which take place between employer and employee, sometimes labelled by the wider terms of capital and labour.

The gradual change of the industrial structure through co-partnership and profit-sharing schemes and co-operative undertakings is tending continuously towards the merging of the one in the other, so that employees are becoming their own employers. It is significant that, in these days, when the phrase "capital and labour" is used, it leaves a mental impression of antagonism; whereas the term "employer and employee" gives an impression of co-operation. In a discussion, therefore, of the problems arising from industrial relations, it may be advisable to adopt the latter form, if by so doing it is possible to advance the common cause of social betterment.

Professor Whitehead, in his book "Leadership in a Free Society," sets down the main causes of industrial unrest. It may be of interest to take these causes one by one, and to see how the common-sense method of dealing with the human factor in industry can minimize that unrest and its evil consequences.

The first cause set down by Professor Whitehead is that of wages, and he points out that though this may often be expressed as a dispute about absolute wages, the real problem is more often one of wage differentials. Absolute wages in themselves mean little or nothing as far as the remuneration for services rendered is concerned. The assessment of absolute wages in relation to work done is impossible without some comparative basis, and all arguments as to wage rates arise from different rates being paid either for the same class of work elsewhere or for other classes of work which require relatively greater or less skilled performance.

In these days, with national agreements of all kinds relating to wage rates, the average employer follows the instructions issued and takes little independent action, and it is to be hoped that strikes and lock-outs over rates of pay will disappear as these agreements become more universal and equitable. The principal stumbling-block to removing the causes of industrial unrest at the present time is the small employer who recognizes no control but his own, and mercilessly sweats those who work for him for his own personal profit. He is a difficult individual to handle. He has a hundred excellent reasons, many of them quite sound, why such low wages should be paid. Yet in the background there lurks the spectre of the sweatshop, which we shall never banish until some means has been found for dealing with employers of this type.

Group Integrity

THE second cause of unrest is stated to be unwise dismissals, and Professor Whitehead has much of interest to say with regard to what he calls "group integrity." The problem can usually be analysed on a basis of justice, and I am of the opinion that in this country the average workman has little or no sympathy with the dismissed individual, if he feels that the dismissal is justified. He usually possesses a self-respect based upon doing a fair day's work under decent conditions, and where troubles have arisen over a justified dismissal it will almost always be found that the true circumstances were not known.

There are times when the temper of a shop has reached a difficult stage, as when agitators have got in for the express purpose of making difficulties for the management. But such a case is entirely different from that of the bold spirit who starts an agitation in a badly-run concern to get rid of abuses. Our grandfathers called him an agitator and dismissed him, but in these more enlightened days the criticisms of such a man, bold enough to come forward and point out to the management what is wrong, should be accepted and discussed and, if possible, met. I doubt whether there are many cases of dismissal from this cause today.

It is true that the reduction of staff during slack periods is not an easy problem to solve satisfactorily. Even the best-laid plans and the most honest intentions may cause difficulty, but dismissals must always have a good reason, and unrest can best be avoided by a plain statement of the reason to the individual concerned.

The next form of labour unrest mentioned by Professor Whitehead arises from physical conditions within the plant. While we are far from being able to say that every factory in this country is working under model conditions, it is probably true that the majority of those built and started up within the last five years have been extremely good.

But unfortunately the modern plants still form a very small percentage of the factories in this country today, and there are still to be found a great number in which the conditions are far from satisfactory. It is true that conditions have to be very bad before active unrest shows itself amongst the employees, for they have become so much a part of the normal surroundings that they are taken for granted. I hope to return to this question of working conditions when dealing with the problem of future industrial relations as a whole.

The last form of unrest mentioned by Professor Whitehead is that due to the resistance of the employee to change. It is a resistance which seems to grow greater with increasing age; the younger generation, with the flexibility of youth, are more ready to accept change and to demand it. And when changes are needed they must be brought about

* In *Labour Management*, London, January, 1938.

by obtaining the cooperation of those affected, rather than by imposition from above.

It is true that in an industrial organization this cooperative method needs some qualification. The undertaking has to achieve a certain result in a short period, in that it must make a profit during its financial year. Every member of the organization is helping towards that end, but the path is set about with obstacles, and it is necessary to have a leader who can direct progress in accordance with his knowledge of all the principles involved. In making changes, therefore, the managing director is doing what is best for the community as a whole, even though it may impose some hardship on individuals within the community. He must make the decisions and cooperation must be based upon a straightforward explanation as to why they have been taken. The average employee has plenty of common sense, and is well able to judge whether a proposed change in routine, hours or working conditions is going to be a benefit or not to the business as a whole. It is my experience that the best way to achieve changes by cooperation is to survey the position very carefully beforehand, from all points of view, have personal discussions with those most likely to be affected, and, once the decisions have been made, to explain the changes and why they have been made and to answer any questions that may arise.

Confidence in the Future

IF ONE surveys the future of industrial relations the main impression is one of confidence and hope. Every thinking man and woman today will approve the growth and stabilization of the Trade Union movement, and the steady rapprochement that is going on between capital and labour. The astonishing progress that has been made in this direction in the last 50 years is a tribute to the practical commonsense which is at the bottom of the British character, and the future of sound industrial relations will depend upon the continuance of that rapprochement. Labour is becoming more alive to the major industrial problems of supply and demand, and to the fact that wages in the majority of industries today form a lessening proportion of the total cost to sell?

The announcement by the Trades Union Congress of the formation of a scientific body to direct the constructive work of the trades unions into the most effective channels is evidence that the leaders of the movement are alive to the diminishing importance of the wages factor in industrial costs. The increasing use of machinery with the development of the large technical unit and the need for complex distribution organizations have all tended to a lessening of the basic value of man power, though there are, and always will be, trades where the work can only be carried out by manual labor.

If our labour relations of the future are to be based on sound foundations we must ask from the operatives an appreciation of the heavy charges, other than direct material and labour, which have to be met by an industrial undertaking, while we must be able to prove to them that these charges are not excessive.

Those Little Things

ONCE that stage has been passed, we come to the wider problems of the working conditions under which the operatives spend most of their lives. These conditions should be among the first considerations of those who have the power to control them, and the items listed under this head should not be limited to the minimum prescribed by the Factories Act. In any works there are dozens of insignificant matters which cause minor dissatisfactions all the year round. They are little things, never big enough for the workmen to report to the foreman or to warrant a formal complaint to the works manager, and so they go on, year after year, until finally they are taken for granted. Much good might be done if every firm, large or small, would engage a betterment man to wander about the place for a fixed period every year, to make suggestions of little improvements that might remove obstacles, and listen to any suggestions that those actually doing the work might care to make.

I have had many criticisms of this suggestion, the most frequent one being that there should be no need for an outsider to do this, because the foremen, the superintendents, are often on the job all the time, and it is up to them to deal with such matters. But anyone who has carried the responsibility of a factory knows only too well the tremendous burden of work which fills the day, making it impossible for the permanent officials to deal with these minor obstacles, which they know exist, but which they never have time to tackle.

The second criticism is usually that it should not be difficult to find some individual with time to spare who could take up these matters. Certainly if someone could be commissioned to spend his full time in looking for troubles and putting them right, much might be achieved, although operatives are usually more ready to make suggestions to an outsider than to a member of the permanent staff. They know that he has no axe to grind and is only there for a short time, and therefore the opportunity must be taken at once or it will be lost.

The third criticism is that in many undertakings, works or staff committees already exist which could handle such matters. But the matters that I have in mind are seldom thought of sufficient importance to be put before the committees, and are frequently dependent upon a hindrance or discomfort to a particular individual, whereas the committees usually handle matters that affect a group of one kind or another. Where such committees exist the betterment man might work in close cooperation with them, and obtain some very useful pointers as to where his services could be utilized.

It has been suggested to me that the individual best able to deal with such matters successfully is the labour manager. But betterment work is not confined to the matters which, in most concerns, come under the jurisdiction of the labour manager. The betterment man should range freely throughout the whole undertaking, but the labour manager might easily find himself treading on other people's toes where the outside betterment man would be considered as within his own proper sphere.

If the labour manager can carry on a steady campaign of betterment work, then more power to his elbow. But whoever does it, I feel very strongly that it is work which could and ought to be done, and which will pay for itself many times over if properly handled. If we are to have sound industrial relations in the future we must build up a strong bond of good will through the different grades of the undertaking, and the betterment man should be one of the components that form that bond.

I think it is obvious that our national strength is to be found at the present time in our steady advance towards democratic ideals. I realize how far we still have to travel, and I am not satisfied with things as they are, or content that they should move no faster. But sound industrial relations in the future are bound to be built more and more upon the principles for which democracy stands, and therefore every step that capital and labour, employer and employee, can take to get closer together, every act and every agreement which give a section of the community better working conditions and a chance to live a happier and more secure life, is another move towards the distant goal where democratic ideals and sound industrial relations stand side by side.

Developments in Workmen's Compensation Since 1930

THE latest and most significant increase in the expense of both medical and cash compensation arises from the extension of coverage to occupational diseases.* Such diseases were scarcely thought of at the time of the first compensation legislation and none of the earlier laws included them. They were occasionally

* From "A Report by the Bureau of Medical Economics," in *J.A.M.A.*, February 26, 1938.

brought in where laws provided for industrial "injuries" instead of "accidents," but, on the whole, the worker who might be subject to conditions of employment which led to disease had no recourse in compensation legislation. The courts had generally held that one of the elements that must enter into an accident in the meaning of the law was that its occurrence be "sudden." It should have been evident from the beginning that this distinction was so indefinite that it was certain to disappear. It has been disappearing with great rapidity in recent years and especially in the period since 1930, during which fourteen states have liberalized their compensation laws with regard to occupational diseases—in most cases including such diseases for the first time

The expense of compensation for occupational diseases promises far to exceed present predictions—a characteristic development under all forms of insurance. The manager of the Conservation Department of the National Bureau of Casualty and Surety Underwriters says:

"It is no exaggeration to say that the financial life of some of our most important industries is at stake, and serious effects will occur if measures are not taken to remedy the conditions causing occupational diseases."

Because the present state of medical knowledge offers practically no hope of recovery from such diseases as silicosis, and because many other occupational diseases are apt to be of long duration and to involve compensation payments and usually medical service over many years, the proposal to make industry responsible for the injuries such diseases may cause has led to almost frantic efforts at prevention. It is to be hoped that such efforts will be more successful with regard to occupational diseases than they have been with regard to industrial accidents. Already urgent demands are being made that public health departments extend their efforts into this field.

Because diseases may be even more indefinite in their cause, diagnosis and treatment than accidents, extension of compensation coverage to occupational diseases compelled greater participation by the medical profession. A conference, representative of the interests affected by compensation in New York, in considering the desirable features of legislation including compensation for occupational diseases was of the opinion that:

"The act should provide for a medical board which would have authority lodged in it to determine all controverted medical questions. (In view of recent developments, it would unquestionably be desirable to give such a board authority to determine all purely medical questions in claims for injuries resulting from accidents as well as occupational diseases.)

"Needless to say such a board should be composed of the very best in the medical profession. The board should be appointed by the Governor, by and with the advice and consent of the Senate. The physicians on such a board should devote their entire time to the board's work. The powers of this board as a fact-finding body on medical questions should be final and equal with the powers of the industrial commission or accident board in that respect.

"Findings should be final and conclusive, unless upon review and further evidence presented the finding or conclusion was proven to be manifestly erroneous, or unreasonable, or due to fraud, undue influence, inadvertence, or mistake of law or fact. This board should have supervision of all examinations, if impossible to make all examinations and to determine the nature and extent of disability."

This growing recognition of the dominant significance of the medical phases in workmen's compensation has but followed the evolution of other forms of insurance involving medical care. In the beginning of both sickness and compensation insurance, all emphasis was laid on the administration of the cash phases. It has been only in very recent years that the medical problems and the medical service with which they are concerned have come to dominate the picture. As late as 1932 Frances Perkins, then Industrial Commissioner of the New York State Department of Labor, said:

"In the state of New York, we have in the last year or two come to feel—and I think the people who read the newspapers have come to think—that the medical aspect of the workmen's compensation law and the medical problems connected with it are the outstanding problems. Those of you who administer workmen's compensation laws in other states know that this is not the case, that the medical problems are among the problems but that they are on the whole among the minor problems. We must remind ourselves constantly that, although there may be controversy about this, that or the other aspect of the medical problems, the prime duty of those who are charged with enforcing and carrying out the workmen's compensation laws is to see to it that injured workmen have adequate and proper medical attention. All other things are subordinate and subsidiary to that main duty."

It is difficult to understand how medical problems "are among the minor problems" if the "prime duty" of administration is "to see to it that injured workmen have adequate and proper medical attention" and if "all other things are subordinate and subsidiary to that main duty."

CUMULATIVE INDEX

Abdominal Cavity
—Most Dangerous Common Operations, by T. M. Aderhold, M.D., (February) 67
American College of Surgeons
—Minimum Standard for Medical Services in Industry, (February).... 78
Book Reviews
(by C. O. Sappinton, M.D., Dr.P.H.):
—American Medicine—Testimony Out of Court (January) 40
—Clinical Roentgenology of the Cardiovascular System, by Hugo Roesler, M.D., (February) 81
—Crippled Children, by Earl D. McBride, M.D., (February) 81
—Diseases of the Nails, by Dr. V. Pardo-Castello (January) 40
—The Environment and its Effect Upon Man (January) 40
—Laboratory Diagnosis of Syphilis, by Dr. Harry Eagle (January) 39
—Management of Fractures, Dislocations and Sprains, by John Albert Key, M.D., and H. Earle Conwell, M.D., (February) 80
—Recent Advances in Industrial Medicine and Hygiene, by Dr. T. M. Ling, (February) 81
—Trauma and Disease, Drs. Leopold Brahdy and Samuel Kahn (January) 39
Chest
—Acute Injuries of, by G. S. Baxter, M.D., (January) 26
Dinitrophenol
—A Review of the Literature, by Maurice Hardgrove, M.D., (January) 9
Diseases
—Heart, by Wm. C. Stewart, M.D., (January) 42
—Occupational, Experience in, Retrospect 1937—Prospect 1938, by C. O. Sappington, M.D., Dr.P.H., (January) 23
Editorials
—Things Definite (January) 45
—Pre-Hiring Rehabilitation (February) 95
—Tension in the Teens (February) 96
—Industrial Health (February) 96
—We Add an Editor (February) 97
—Industrial Medical Meetings (February) 99
—Bad Hygiene (February) 99
Fistula
—Horseshoe, in Ano, by G. V. Pontius, M.D., (February) 69
Gonorrhea
—Management of, by Russell D. Herrold, M.D., (January) 5
Hearing
—Aids of, by D. M. Marcucci (January) 32
Hernia
—Autologous Fascia Suture Technique in the Surgical Treatment of Inguinal and Femoral, by R. C. Austin, M.D., (February) 74
—Occupational, Prevention of by the Injection Method, by Louis H. Levy, M.D., (February) 75
Hypertension
—in Engine Drivers to come, by Nat. P. Brooks, M.D., (February) 61
Injuries
—Acute, of the Chest, by G. S. Baxter, M.D., (January) 26
Industrial Medicine
—and Compensation in Mexico, by Leopold Brahdy, M.D., (January).... 46
—Organization of, by Aaron Samuel Leven, M.D., Dr.P.H., (January)..... 36
Mexico
—Industrial Medicine and Compensation in, by Leopold Brahdy, M.D., (January) 17
Occupational Disease
—Experience in, Retrospect 1937—Prospect 1938, by C. O. Sappington, M.D., Dr.P.H. (January) 23
Sciatica and Fibrositis
—Historical and Recent Cults, Theories, and Facts as Etiology, Diagnosis, and Treatment, by Ferdinand Schmitter, M.D., (February)..... 82
Spine
—Lesions of the, by Edward L. Jenkinson, M.D., (January) 21
Syphilis
—Method of Control of, by H. A. Vonachen, M.D., (January) 41
—and the Worker, by R. R. Sayers, M.D., (January) 1
Tuberculosis
—Collapse Therapy of, by Allan J. Hruby, M.D., (February) 63
Ulcer
—Gastric and Duodenal by Lowell D. Snorf, M.D., (January) 34
Venereal Diseases
—Management of Gonorrhea by Russell D. Herrold, M.D., (January)..... 5
—Syphilis and the Worker, by R. R. Sayers, M.D., (January) 1
Whiting, Frank V.
—"Relieved from Active Duty" (January) 33